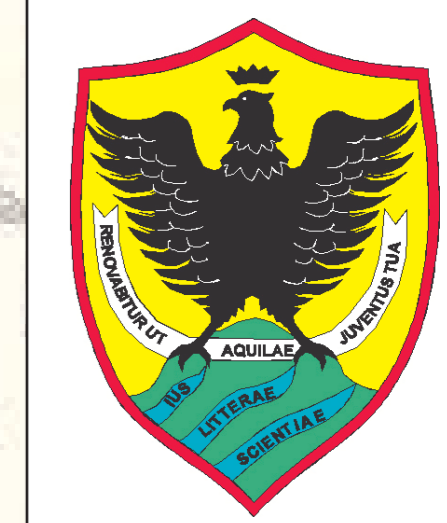


Exploitation of spontaneous aromatic plants of Central Italy



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Introduction

Aromatic plants, as source of essential oils having fragrant scent, flavoured notes and possessing biological properties, are non food plants of economical importance in different application fields (Piccaglia et al., 1993). Owing to a general popularity of the use of natural substances instead of synthetic compounds, an increase in their marked demand is predictable and, for this reason, to improve the knowledge of the biodiversity of aromatic plants can represent a valuable contribution to their exploitation.

In our study, five spontaneous species of aromatic plants collected in different natural habitats of the Abruzzi Apennines (Central Italy), were classified and characterised on the basis of their essential oil composition.



Materials and methods

Plant material:

Sage (*Salvia officinalis* L. var. *angustifolia* Ten.), Winter savory (*Satureja montana* L. ssp. *montana*), Artemisia (*Artemisia petrosa* (Baumg) Jan. Ex. D.C. ssp. *eriantha* (Ten.) Giac. e Pignatti), Calamint (*Calamintha nepeta* (L.) Savi subsp. *nepeta*), Hyssop (*Hyssopus officinalis* L. subsp. *aristatus* (Godron) Briq.),

Essential oil isolation: steam distillation of fresh material. Essential oil characterization: GC/MS.

Sage

α,β -thujone	41.90
α -humulene	12.42
β -caryophyllene	9.05
1,8-cineole	7.73
β -pinene	7.22
camphor	2.10

Winter savory

p-cymene	31.6
thymol	29.58
γ -terpinene	8.65
carvacrol	3.79
methyl thymol	3.56

Artemisia

α -thujone	78.33
β -thujone	8.92
sabinene	1.46

Calamint

menthone	41.67
pulegone	21.05
piperitone	11.88
eucarvone	3.57
terpinen-4-ol	3.30
limonene	3.21

References

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Results and discussion

Sage was characterized by a composition typical of the sage of Dalmatian origin (Vernin et al., 1986). The high content of thujones (42%) and low amount of camphor (2%) confer to this oil a potentially high commercial value.

Winter savory could be identified as "thymol" chemotype due to the presence of main compounds which define the biosynthetic sequence γ -terpinene \square p-cymene \square thymol.

Artemisia, an endemic plant probably of quaternary origin rich of thujones (more than 87%), resulted a "thujone" chemotype as reported by other authors for the same species (Bellomaria et al., 1981).

Calamint showed high contents of menthone (42%), pulegone (21%) and piperitone (12%) which are responsible of the strong smell of mint of this aromatic plant. Hyssop strains, characterized by the presence of pinane-type monoterpenes, could be classified as three different chemotypes. In particular, the hyssop from Popoli was defined by methyl eugenol > limonene > 1,8-cineole, that from Avezzano by myrtenol > β -pinene > isopinocampone and that from Assergi by β -pinene > 1,8-cineole > methyl eugenol.

Hyssop

	Popoli (260 m)		Avezzano (697 m)		Assergi (1040 m)	
methyl eugenol	43.9		myrtenol	32.6	β -pinene	24.7
limonene	15.9		β -pinene	19.3	1,8-cineole	23.1
1,8-cineole	12.1		isopinocampone	10.0	methyl eugenol	12.2



Conclusions

The characterization of the essential oils can represent a valuable contribute to the taxonomic classification of spontaneous plants.

The peculiarity of each oil evidences the richness and the potentiality of these plants and indicates their possible exploitation in different application fields.