

Essential oil constituents from two uncommon *Zingiber* rhizomes. (Poster)

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Introduction

The genus *Zingiber* has been regarded as the significant plant species due to their medicinal and nutritive properties. In Thailand, these plant species are abundant and biodiverse. As part of our work on isolation and analysis of chemical constituents of essential oils of promising Thai aromatic plants for the establishment of essential oil database to support further pharmaceutical development, we have now studied the essential oil composition of two uncommon *Zingiber* species i.e. *Z. junceum* Gagnep. and *Z. niveum* Mood & Theilade.

Objective

To analyze the rhizome oil constituents from two uncommon *Zingiber* species i.e. *Z. junceum* and *Z. niveum* in order to obtain the chemical profile to support further pharmaceutical development.

Methods

The oils were obtained by hydrodistillation of the fresh rhizomes for 5 h in a Clevenger-type apparatus. Capillary GC-FID and GC-MS were employed for the oil analysis. Identification of the oil components was accomplished by comparison of their GC retention indices as well as their mass spectra with corresponding data of authentic compounds or published spectra (Heller and Milne, 1978, 1980, 1983; Adams, 2001).

Results

The essential oil yield was 0.20 % and 0.22 % for *Z. junceum* and *Z. niveum* respectively.

Three main constituents i.e. methyl eugenol (54.73%), α -pinene (10.49%) and *E*-methyl isoeugenol (8.68 %) were found in *Z. junceum* oil. For oil of *Z. niveum*, elemicin (31.70%), camphene (18.30%), α -pinene (13.59%) and borneol (12.68%) were dominant.

Conclusion

The hydrodistilled rhizome oils of two uncommon *Zingiber* species, *Z. junceum* and *Z. niveum* were analyzed by capillary GC-FID and GC-MS. The oil composition was very different between the two species. The major volatile components from *Z. junceum* were methyl eugenol (54.73%), α -pinene (10.49%) and *E*-methyl isoeugenol (8.68 %) whereas elemicin (31.70%), camphene (18.30%), α -pinene (13.59%) and borneol (12.68%) were found in the essential oil of *Z. niveum*.

Selected references

1. Adams, R.P., 2001, Identification of essential oil components by gas chromatography quadrupole mass spectrometry. Allured publishing Corp., Carol Springs, IL.
2. Heller, S.R. and Miline, G.W.A. 1978, 1980, 1983. EPA/NIH Mass Spectral Database, U.S. Government Printing Office, Washington D.C.

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