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Table of contents

Environmental

Lipid biomarkers of Suspended Particulate Organic Matter in Lake Bled (NW Slovenia)

Geomicrobiological Journal, **30**, 291-301 (2013)
Marinka Gams Petrišič, Nives Ogrinc

Tags
DB-1ms, DB-5ms, 6890N GC, environmental, water analysis

Abstract
The fatty acid, hydrocarbon and sterol composition were used to investigate the organic sources and compositional changes in particulate organic matter (POM) and trap material in the water column in the deepest part of Lake Bled (NW Slovenia) in October 2006. Fatty acids distribution of algal origin were abundant in particles and trap material in epilimnion, while in anoxic zone POM and trap material were enriched in bacterial fatty acids (e.g. 16:1*n-7*, 18:1*n-7*, 18:1*n-9*, *iso*-C_{14}-C_{16} and *anteiso*-C_{15}). The lowest $\delta^{13}C$ value of –51.7‰ was observed in 18:1*n-7* FA in trap material and was the only FA which could be linked to methanotrophic bacteria. In addition Zooplankton left a marked imprint on particulate lipids and trap material at 12 m by predominance of *n*-$C_{18:0}$ over *n*-$C_{16:0}$ FA, short-chain, even-carbon *n*-alkenols, the high proportion of cholest-5-en-3β-ol (44.8% of total sterol concentration (TST)), cholesterol/phytosterol ratio of 0.49 and $\delta^{15}N_{PN}$ values of 6.8 and 11.7‰. It was shown that lacustrine phytoplankton biosynthesize 24-ethylcholest-5-en-3β-ol which is often used as a marker of terrigenous organic matter. Phytoplankton represented an important source of cholest-5-en-3β-ol and 24-methylcholest-5,22(E)-dien-3β-ol, while 24-ethylcholesta-5,22E-dien-3β-ol and 24-methylcholest-5-en-3β-ol were of terrestrial origin. There was an evidence of microbial transformation of Δ^5-stenols to 5α(H)-stanols in POM and trap material in hypolimnion.

Food testing and agriculture

Comparative study of the essential oils of *Monodora myristica* from Nigeria

European Chemical Bulletin, **1**, 263-265 (2012)
Ignatius Adekunle Owokotomo, O. Ekundayo

Tags
DB-1ms, 6890N GC, 5973 MS, food testing & agriculture, dietary supplements, natural compounds & additives

Abstract
The essential oils from seeds and stem-bark of *Monodora myristica* (Annonaceae) growing wild in south western Nigeria and used as spice in many parts of Nigeria were extracted by hydrodistillation and analysed by GC- MS. The percentage yields of oils were 2.16%v/w and 0.25%v/w, respectively. The essential oil of seeds contained germacrene D-4-ol (25.48%), tricyclo[5.2.1(1,5)dec-2-ene (13.35%), *δ*-cadinene (11.09%) and linalool (15.10%) as major constituents while the dominant constituents of the stems-bark oil were γ-cadinene (31.31%), α-elemene (17.98%), α-cubebene (6.70%) and γ-muurolene (5.94%). The major constituents of the seeds oil of *Monodora myristica* from Nigeria were compared based on literature. ©2012 European Chemical Bulletin.

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