Diversity in volatile chemicals and antibacterial activity among selected genus of Cinnamomun, Etlingera and Schizostachyum from Sabah/ Thilahgavani Naggappan, Mumtaz Hidayatullah Yatau, Jamilah Mohd Salim, Charles S. Vairappan

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Abstrak

ABSTRAK
The volatile chemicals from species of wild Cinnamomum spp. (C. racemosum, C. cuspidatum, C. politum, C. javanicum), Etlingera spp. (E. pyramidosphaera, E. megalocheilos, E. coccinea, E. elatior) and Schizostachyum spp. (S. blumei, S. brachycladum, S. lima, S. pilosum) found in Sabah were investigated. The oils were obtained from the bark, rhizome and culm of respective specimens by hydrodistillation and the profile of volatile chemicals was obtained using Gas Chromatography- Mass Spectrometry (GCMS). Dominance of eucalyptol, terpinen-4-ol and eugenol were consistent among the species from genus Cinnamomum. aromadendrane oxide, lauryl aldehyde, elemicin, borneol and 1-dodecanol were predominant among the species from genus Etlingera. α-elemol, coumaran, guiacol-4-vinyl, palmitic acid and phytol acetate predominate the species from genus Schizostachyum. Strong inhibition against Staphylococcus aureus (MIC: 5.62 ± 0.5 μg mL-1) were exhibited by essential oils of C. cuspidatum and E. coccinea, oil of S. blumei inhibited Listeria monocytogenes (MIC: 4.60 ± 0.5 μg mL-1), oil of C. javanicum inhibited Salmonella typhimurium (MIC: 5.50 ± 0.5 μg mL-1). meanwhile the oil of C. politum suppressed Salmonella enteritidis (MIC: 5.20 ± 0.5 μg mL-1) was measured using microdilution method. these findings reveal the potential of selected plants used by indigenous communities of Borneo as antimicrobials in food, cosmetics and pharmaceutical industries.