

## Diversity in volatile chemicals and antibacterial activity among selected genus of *Cinnamomum*, *Etilingera* 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*), *Etilingera* 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 *Etilingera*. -elemol, coumaran, guiacol-4-vinyl, palmitic acid and phytol acetate predominate the species from genus *Schizostachyum*. Strong inhibition against *Staphylococcus aureus* (MIC:  $5.62 \pm 0.5$  g mL<sup>-1</sup>) were exhibited by essential oils of *C. cuspidatum* and *E. coccinea*, oil of *S. blumei* inhibited *Listeria monocytogenes* (MIC:  $4.60 \pm 0.5$  g mL<sup>-1</sup>), oil of *C. javanicum* inhibited *Salmonella typhimurium* (MIC:  $5.50 \pm 0.5$  g mL<sup>-1</sup>). meanwhile the oil of *C. politum* suppressed *Salmonella enteritidis* (MIC:  $5.20 \pm 0.5$  g mL<sup>-1</sup>) 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.