

GC–MS and FTIR analyses of oils from *Hibiscus sabdariffa*, *Stigma maydis* and *Chromolaena odorata* leaf obtained from Malaysia: Potential sources of fatty acids

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ABSTRACT

Fatty acids are reduced carbon chains mostly found in nature with different usages in the industrial feedstock, pharmaceutical and food industries. Plants are embodiments of substantial amounts of fatty acids. In this study, gas chromatography-mass spectrometry (GC–MS) analysis was employed to identify the chemical compositions of oils from *Hibiscus sabdariffa* flower, *Stigma maydis*; *Chromolaena odorata* leaf extracted through microwave-assisted hydrodistillation method. In addition, the oils from the three plant samples were characterized using Fourier transform infrared spectroscopy (FTIR) analysis to evaluate the fingerprints. A total number of 16, 13 and 13 chemical compounds were identified in the oils from *H. sabdariffa* flower, *S. maydis* and *C. odorata* leaf, respectively. The main identified compounds were fatty acids and esters. Moreover, the FTIR characterization reflected the presence of hydroxyl group, cellulose-fatty acids, methyl carboxylic acid, nucleic acid, and carbohydrate. This finding has fully demonstrated that the oils from *H. sabdariffa* flower, *S. maydis* and *C. odorata* leaf can serve as the potential sources of fatty acids.

KEYWORDS:

Microwave-assisted hydrodistillation; Gas chromatography-mass spectrometry; Fatty acid; *Hibiscus sabdariffa*; *Stigma maydis*; *Chromolaena odorata* leaf