

## Determination of agarwood oil's significant chemical compounds using principal component analysis

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### ABSTRACT

Agarwood oil is considered a high market value oil and expensive commodity. It consists of a complex mixture of sesquiterpene hydrocarbons, oxygenated sesquiterpenes and chromone derivatives. These chemical compounds contribute to the determination of Agarwood oil quality. In this study, a statistical analysis concentrates on chemical compounds of Agarwood oil is conducted. The chemical compounds were analysed using Principal Components Analysis (PCA). Using GC-MS analysis, the chemical compounds were first identified. Then, PCA with correlation matrix was used to further analyse the data. Scree Plot was used to select valid principal components. To determine the significant chemical compounds, the data under these principal components were rotated using Varimax. 11 chemical compounds were found significant and they can be used in identifying Agarwood oil quality.

### KEYWORDS

Agarwood oil; Chemical compounds; Principal component analysis

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