**Characterization of Prachak Oil**

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Prachak oil is a high 1,8-cineol chemotype of *Melaleuca quinquenervia* from Svay Rieng Province in Cambodia, with significant antibacterial activity that is potentially important economically and as a natural medicine. This project arose from the lack of published reports about this oil from trees in Cambodia. Also, the oil was being bought by Vietmanese merchants from villagers in who did not know all the potential uses of the oil. Moreover, this oil was been using by people in the villages as a medicine, without scientific evidence of its effectiveness.

Prachak leaves and some oil were directly collected from two different villages: Thlok Pring and Otamor, Svay Teap District, Svay Rieng Province. The oil was extracted by steam distillation and analysed by GC-FID and GC-MS. The oil was tested for antibacterial activity, by using the disk diffusion method and compared with Eucalyptus oil and Tea tree oil against E.coli, Micrococcus *luteus* and Staphylococcus sp. that sometimes affect human health. After analysing the oil by GC-FID and GC-MS, 18 important components were identified that represent about 97% of the oil. The major component was 1,8-cineol(71.06%) followed by α-Terpineol (10.38%​), α-Terpinene (2.69%), α-Pinene(1.90%), β-Pinene(1.73%), Isoterpinollene(1.05%), Terpinene-4-ol (0.75%) and other components that contributed less than 1% each. Prachak oil was more effective than Eucalyptus oil, but similar to Tea tree oil against some bacteria.