



Chemical identification of essential oil of *Piper capense* (Piperaceae) from Limpopo province, South Africa

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'Wild Pepper' (*P. capense*), is a straggling shrub or small tree that is known as Mulilwe in the Venda sub-region of Limpopo Province, South Africa. Our interest in its essential oil components arose mainly because it is used by local traditional healers for treatment of various ailments *inter alia* sore throat, tongue sores and venereal diseases (1,2) Plant materials were collected from Zoutspansberg mountains and voucher specimens were deposited at the Thohoyandou Botanical Gardens (Venda Herbarium). Fresh leaves (300g) and stem (300g) were separately subjected to hydrodistillation in a modified Pyrex® Barrett distilling receiver apparatus for ~3h. The oil yields (%w/w) were 0.15% and 0.03% respectively. The essential oils were analyzed using a Hewlett Packard 6890 GC-MS system (HP-5MS Column) and Mass spectra was recorded by a HP 5937 series mass selective detector (MSD). Identification of oil components was achieved based on their retention indices and by comparison of their mass spectral fragmentation patterns (NIST database/ChemStation data system). The leaf oil contains δ -3-carene (15.98%), citronellyl acetate (1.39%), *o*-cymene (11.96%), limonene (39.95%), linalool (6.20%), *p*-menth-2-en-1-ol (1.75%), *cis*- β -ocimene (8.61%), *trans*- β -ocimene (1.67%), α -phellandrene (10.25%) and α -terpinolene (2.24%) while the stem oil contains δ -3-carene (36.11%), citronellyl *n*-butyrate (2.03%), *o*-cymene (9.09%), limonene (25.79%), linalool (10.87%), *p*-menth-2-en-1-ol (1.16%), *cis*- β -ocimene (12.10%), α -phellandrene (1.68%) and piperitone (1.17%). Citronellyl acetate, *trans*- β -ocimene and α -terpinolene are only found in the leaf oil whereas citronellyl *n*-butyrate and piperitone are only found in the stem oil. A comparison of essential oil components of *P. capense* with those of different geographical origin will also be given.

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2. Mabogo, D.E.N. Univ. of Pretoria, Library Services, 2012, 1-264.

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