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Chemical composition and bioactivity of essential oils extracted from the sawdust of Moroccan *Tetraclinis articulata* (Vahl) Masters**M Bourkhiss¹, A Chaouch², M Ouhssine², J Costa³ and J Paolini³**¹CRMEF, Morocco²Université Ibn Tofaïl, Morocco³Université de Corse, France

With a view to contribute to the evaluation of Moroccan flora through the identification of new potentially interesting compounds at both biological and therapeutic level, we have undertaken a study of essential oils in sawdust of *Tetraclinis articulata* (Vahl) Masters originating from the Khemisset region (Morocco). The study of the sawdust's essential oil was completed by GC and GC/MS where we identified a total of 22 components and the main five being: α -acoréol (20.9%), cédrool (17.9%), totarol (8.8%), α -cédrène (8.7%) and β -acoréol (7.4%). This essential oil was fractionated on an open silica column using an eluent of increasing polarity. Five fractions were collected in this way. The fraction (FH) eluted with the pentane comprised sesquiterpene hydrocarbons whereas the other four oxygenated fractions (FO₁ to FO₄) eluted with a diethyl oxide/pentane mix of increasing polarity were dominated by a diterpene phenol and two sesquiterpene alcohols respectively: totarol in the FO₁ (42.4%), α -acoréol in the FO₂ (34.9%) and FO₃ (54.0%), and cédrool in the FO₄ (58.2%). The sawdust's oil and its chromatographic fractions were tested *in vitro* against four bacterium: *Escherichia coli*, *Bacillus subtilis*, *Staphylococcus aureus* and *Micrococcus luteus*, and three fungi: *Penicillium parasiticus*, *Aspergillus niger* and *Trametes pini*. The unfractionated essential oil and oxygenated fractions, particularly FO₁, comprising mainly of Totarol were the most active. Therefore, the FO₁ fraction would be recommended for optimizing the antimicrobial activity of *Tetraclinis articulata*'s essential oils.

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