

ORIGINAL PAPER

Fatty Acids, Tocopherols, Phenolics and the Antimicrobial Effect of *Sclerocarya birrea* Kernels with Different Harvesting Dates

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Abstract

Oil extracted from the kernel of *Sclerocarya birrea* with different harvesting dates was studied in terms of the oil content, fatty acids, tocopherols, phenolic compounds and antimicrobial activity. A quantitative increase in the oil content was observed to reach 63.0% at the end of the last harvesting date. The percentage of total fatty acids had altered and palmitic acid content was found to be 16.8% at the first date of harvesting and dropping for the rest of the dates to reach 14.6% by the end of the harvesting process. In the same manner, stearic acid was found to be 15.2% at the first date and this dropped dramatically to reach 8.8% by the end of the harvesting, while oleic and linoleic acids increased from 58.9 and 4.3% to 67.3 and 5.9%, respectively. Alpha and gamma tocopherols decreased rapidly, whereas the d-tocopherol and d-tocotrienol were 4.8 and 4.9 mg/100 g, respectively at the beginning and had disappeared completely by the last harvesting date. Total phenolic and flavonoid content increased continuously through the different harvesting dates. *Sclerocarya birrea* kernel oil was effective in inhibiting the growth of three out of four bacterial strains tested. This inhibitory effect was less than that of the control.

Keywords Antibacterial activity _ Fatty acids _ *Sclerocarya birrea* _ Tocopherols _ Total flavonoid _
Total phenolic