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Chemical composition and nutritional evaluation of date palm (*Phoenix dactylifera* L.) Seed oil from six cultivars

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This investigation aimed to evaluate the chemical composition and physicochemical properties of seed oils from 6 date palm (*Phoenix dactylifera* L.) cultivars (Barhi, Khalas, Manifi, Rezeiz, Sulaj, and Sukkari) and to compare them with conventional palm olein. The mean oil content of the seeds was about 7%. Oleic acid (48.67%) was the main fatty acid, followed by lauric acid (17.26%), myristic acid (10.74%), palmitic acid (9.88%), and linolenic acid (8.13%). The mean value for free fatty acids content was 0.5%. The *P. dactylifera* seed oil also exhibited a mean tocol content of 70.75 mg/100 g. α -Tocotrienol was the most abundant isomer (30.19%), followed by γ -tocopherol (23.61%), γ -tocotrienol (19.07%), and α -tocopherol (17.52%). The oils showed high thermal and oxidative stabilities. The findings indicate that date seed oil had great nutritional value and has the potential to be used in the food industry as an abundant alternative to palm olein. It can be used for food applications especially as frying or cooking oil. In addition, date oil has also potential to be used in cosmetic and pharmaceutical practices as well. The extraction of oil from *Phoenix dactylifera* seed on large scale can create positive socioeconomic benefits especially for rural communities and could also assist to resolve the environmental issues generated by excess date production in large scale date-producing countries.

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