

Evaluation of authenticity and quality of Argan oils sold on the Bulgarian market

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This study analyzes the fatty acids, triacylglycerols, sterols, and oxidative stability (acid value, peroxide value, conjugated dienes and induction period) of six Argan oils for nutritional or cosmetic purposes imported on the Bulgarian market by different traders. The results were compared to that of authentic cold-pressed Moroccan Argan oil and processed by principal component analysis and clustering. The subsequent application of chromatographic and statistical methods revealed that the lipid composition of five of the samples was identical to that of the reference authentic Argan oil. Their oxidative stability was in a range such as to classify them as fine virgin Argan oils. One sample, labeled as containing an addition of antioxidants, showed the presence of another plant oil with fatty acid composition similar to that of pure Argan oil, but with significantly different triacylglycerol and sterol compositions. It also had the lowest oxidative stability. On the other hand, no significant differences in the fatty acids, triacylglycerols, sterols, and oxidative stability of the investigated Argan oils were observed regarding their recommended application, i.e. for cosmetic or nutritional purposes.

Keywords: Argan oil, Authenticity, Fatty acids, Oxidative stability, Principal component analysis, Sterols, Triacylglycerols

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