Abstract

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# Moringa (Moringa oleifera Lam.) and Jujube (Ziziphus Lotus Linn.) leaf extracts effect on processed corn oil under frying conditions

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## Abstract

Actually, food transition in favor of processed foods is noticeable in Tunisia that has a Mediterranean climate that favors the growth of a great number of medicinal plants as Zizyphus Lotus, also known as Jujube but it is not well exploited in the food industry. However, Moringa oleifera known as magic plant is an introduced plant with worldwide exploited therapeutic and nutritional potential. In the present study, leaf extracts of moringa (ML) and jujube (JL) were compared for their phenolic contents, antioxidant activity and their effects on the thermal stability of corn oil (CO). Refined CO and CO supplemented with 0.5% ML (CO+ML) and JL (CO+JL) were exposed to heating (180°C) for 8 hours. Changes in peroxide value (PV), free fatty acids (FFAs), oxidative stability (OS) and fatty acids (FAs) profiles were monitored. Results showed that JL presented higher phenolic ccontents including phenolic acids and flavonoids than ML.. For antioxidant activities, JL exhibited greater anti-DPPH activity and had higher reducing power than ML. After heating for 8 hours at 180°C, FFA increased by 24%. However, FFAs of enriched oils decreased by 30-40% indicating that JL and ML protected effectively oil from primary oxidation product generation. CO+ML and CO+JL showed lower PV and higher OS than CO. CO+JL was more stable than CO+ML. For FAs profile, a significant increase in saturated and mono-unsaturated FAs percentages and a significant decrease in polyunsaturated FAs were recorded for CO and CO+ML. by 18% and 7%, respectively. No changes in FAs composition were observed for CO+JL demonstrating an excellent resistance of this enriched oil to thermal oxidation. This might be attributed to the presence of polyphenols allowing extended oil thermal resistance. Results confirmed that the protection induced by Jujube leaves is better than that of Moringa leaves in terms of PV, FFAs, OS index and stability of FAs profile.

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## Biography

Associate-professor in food industry with 10 years of teaching experience at Tunisian universities Expert in food sciences and technologies. Distinguished publications in renowned academic journals all over the world in the field of food processing, cardiovascular diseases risk f actors. Developed partnership and collaboration between university and food industry companies. Active coordinator in license reinstatement.