



PRELIMINARY RESULTS ON THE RECOVERY OF COENZYME Q10 FROM VEGETABLE AND ANIMAL WASTE

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Abstract: Coenzyme Q10 (CoQ10) is a vitamin-like compound found naturally in plant- and animal-derived materials. This study aimed to determine the level of CoQ10 in some food by-products (oil press cakes) and wastes (fish meat and chicken hearts) to recover this compound for further use as a dietary supplement. The analytical method involved an ultrasonic extraction using 2-propanol, followed by high-performance liquid chromatography with diode array detection (HPLC-DAD). As a result, the CoQ10 content was found in press cake (rapeseed, sunflower, pumpkin, linseed and walnut) and in the lyophilized and raw chicken hearts sample, but it was not detected in hempseed press cake and fish meat.

• Introduction

Most animal-originated foods, such as meat, egg, and dairy products, are critical sources of Coenzyme Q10 (CoQ10)¹; other available food sources include vegetable oil, fish, bee pollen and microorganisms.

• Material and method

Six different press cakes resulting from the cold extraction process of rapeseed, sunflower, pumpkin, linseed, walnut, and hempseed oils, respectively, minced samples of whole fish and chicken hearts, have been tested for CoQ10 content using the ultrasonic extraction with 2-propanol.



• Results and discussions

Pumpkin press cake showed the highest level of CoQ10 (84.80 μg CoQ10/g material) among the vegetable waste studied and chicken heart (114.39 μg CoQ10/g material) among the animal ones.

• Conclusions

The ultrasound-assisted extraction using 2-propanol is suitable for recovering CoQ10 both from vegetable and animal matrices; it is simple to perform and environmentally friendly.

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