

Obtaining an Alcoholic Propolis Extract in the Ultrasound Field

Raul IANCHICI, Monica ZDREMTAN

“Aurel Vlaicu” University from Arad, Faculty of Food Engineering, Tourism and Environment Protection,
no. 2 Elena Dragoi Street, Arad, Romania
(e-mail: monica_zdremtan@yahoo.com)

Abstract

The propolis is a very valuable apiculture product that contains vegetable resins, waxes and other components. It has many usages, especially because it's antiseptic effect.

The propolis is used, most of the time, as an alcoholic extract, obtained by dissolving the propolis in ethylic alcohol.

If the propolis and alcohol mixture is introduced in an ultrasonic field, it is observed the high decrease of the solubilization period. This is a result of the acoustic cavitation phenomenon that appears in a liquid exposed to an ultrasound field that has enough intensity. The acoustic cavitation takes place by forming cavitation bubbles, which, in the first phase, increase their volume and then suddenly implode, creating a strong shock wave that propagates in the solution. Because of these shock waves, where the pressure can go up to 10000 atm, the solid compounds in the mixture are disaggregated and solubilized.

To establish the effect of the ultrasounds in the solubilization process of the chemical compounds in propolis, the comparative solubilization was made by mechanical stirring and by applying an ultrasound field.

The propolis amount was determined by colorimetric determinations.

Key words: bee products, propolis tincture, ultrasound extraction, ultrasonic extraction

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