



ФОНД  
НАУЧНИ  
ИЗСЛЕДВАНИЯ

МИНИСТЕРСТВО НА ОБРАЗОВАНИЕТО И НАУКАТА

*25 години*

**ВИСШЕ УЧИЛИЩЕ ПО АГРОБИЗНЕС И РАЗВИТИЕ НА РЕГИОНИТЕ**  
**Юбилейна международна научна конференция БЪЛГАРИЯ НА РЕГИОНИТЕ**

*Перспективи за устойчиво регионално развитие*

27-28 октомври 2017 г., Пловдив, България



*25 years*

**UNIVERSITY OF AGRIBUSINESS AND RURAL DEVELOPMENT**  
**Jubilee International Scientific Conference BULGARIA OF REGIONS**

*Sustainable Regional Development Perspectives*

27-28 October 2017, Plovdiv, Bulgaria

<http://regions.uard.bg>

## **Edible Oil Organogels Prepared with Natural Waxes and Their Application**

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**Abstract:** Fats are the most important ingredients of our diet. They provide many functional properties not only as a stand-alone food, but also as ingredients of food formulations. In terms of human nutrition, fats are A, D, E, and K vitamins carriers, energy sources, and essential fatty acid sources as well as they provide some functionalities such as elasticity, plasticity, desirable texture and spreadability for food products. On the other hand, especially the trans and saturated fats are responsible for diseases such as cardiovascular and digestive system disorders, obesity and cancer. Additionally, fats are responsible for physico-chemical deterioration of food products such as oxidation and oil migration.

Liquid oils are currently converted to fats by hydrogenation, partial hydrogenation, interesterification and fractionation methods. These methods change the fatty acid composition of the oils and they have some disadvantages such as high saturated fats and formation of trans fats. Organogelation is a new technique in oil crystallization defined as formation of 3-dimensional networks of an edible oil

produced by adding some gel agents into the oil phase. This technique has some advantages compared with the other oil crystallization methods such as do not changing fatty acid composition, low saturated fats, do not containing trans fats. Gel agents are organic molecules called as organogelators which are waxes, fatty acid and fatty alcohols,  $\beta$ -sitosterol+oryzanol mix, mono and diglycerides, ethyl cellulose. Among these materials, waxes are the most commonly used as gel agents for organogel formation. Hence, in this review, edible oil organogels prepared with natural waxes and their applications are summarized.

**Keywords:** organogels, liquid oil, natural waxes.

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