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*Food Science for Well-being*  
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### **IDENTIFICATION OF THE FALSIFICATION OF BUTTER BY FLUORESCENT METHOD**

Nowadays the range and the production of butter are significantly increasing and it is in great demand among the population. Therefore, some manufacturers in order to increase its production substitute the dairy fat for vegetable. For example, by adding of margarine. Such products cannot guarantee quality and safety of products and at same time it is sold at a higher price, despite the fact that during the production less valuable components are used. Thus, in order to detect the falsification of oil, the fluorescent analysis is used.

Luminescence is an ability of substances to emit light under the influence of various factors, in this case — ultraviolet rays.

Fluorescent method of analysis reveals the falsification of butter. Namely, it determines the type of fat by the fluorescence color. In this regard, without significant time expenditure and quantity of product for research, it can serve as an express method.

As luminescence excitation source, a compact fluorescent UV lamp Delux 26 W- EBT-01 with a wavelength of 365 nm is used.

Now in National University of Food Technology at the Department of Foodstuff Expertise, the research to determine butter's falsification by applying a luminescent method has been started.

For the research, 10 grams of butter are taken. Afterwards, the sample is placed in the black «box» on a non-luminescent glass. There the fluorescent ultraviolet lamp and digital camera for the implementation of function sensor system, known as «electronic eye», is placed. It scans the excited state of matter, namely the fluorescence color under the influence of ultraviolet rays, and provides an opportunity to calculate the color intensity by the value of color components of the pixels in the image. Upon receiving the scanned sample, the interpretation of the data is conducted and then the conclusion is made whether there is any falsification.

Consequently, the color of luminescence of natural butter varies from pale to bright yellow. Upon the presence in this product vegetable fat, the fluorescence color appears to be blue. The color intensity of which depends on the degree of vegetable fat's content in it. Therefore, such butter is falsified.

**KEY WORDS:** *dairy butter, falsification, fluorescent method*