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сертифікації»

Національний університет "Львівська політехніка"  
Одеська державна академія технічного регулювання та якості  
Херсонський національний технічний університет

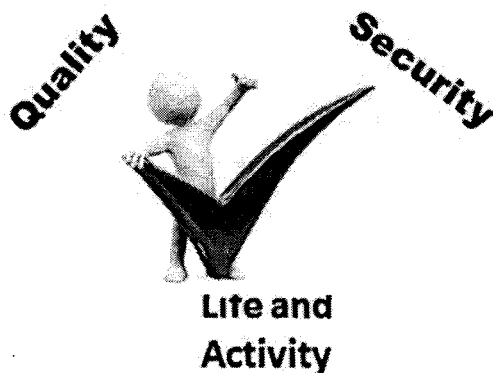
*Всеукраїнська конференція молодих вчених,  
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# *«Якість та безпека життя і діяльності людини:*

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## PROPERTIES OF PROBIOTICS IN FOOD

*Kurenkova O.A., graduate student*

*Tkachenko N.A., professor*

*Odessa national academy of food technologies, Odessa, Ukraine*

Recently, the focus of scientific investigations has moved from the primary role of food as the source of energy and body – forming substances to the more subtle action of biologically active food components on human health. As a result, a new term – functional food – was proposed. Among these foods, probiotics may exert positive effects on the composition of gut microbiota and overall health, and the market is increasing annually. Therefore, the development of these products is a key research priority for food design and a challenge for both industry and science sectors [1].

The intestinal microbiota comprises about 95 % of the total cells in the human body, and it contains approximately  $10^{11}$ – $10^{12}$  CFU/g of intestinal content. The presence of the intestinal microbiota is of essential importance for the development of the mucosal immune system and the maintenance of its activity, and also for the numerous barrier and biochemical activities that it performs [2, 3].

The current commercial expansion in the use of probiotic bacteria in functional foods must be accompanied by new knowledge and exploration of new concepts, together with the study in depth of how these bacteria may be influenced by different factors inherent to technological processes, the physicochemical environment of food, and the gastrointestinal transit [2].

Probiotics, are mono- or mixed-cultures of live micro-organisms, beneficially affect the health of animals or humans when consumed in sufficient amounts, by improving the properties of the indigenous gastrointestinal flora [4, 5].

Species belonging to *Bifidobacterium* and *Lactobacillus* are largely used as probiotics. The latter include *Enterococcus*, *Lactobacillus*, *Lactococcus*, *Leuconostoc*, *Oenococcus*, *Pediococcus* and *Streptococcus* genera. These genera

such as *Bifidobacterium* and *Lactobacillus* are common inhabitants of the human gut but functional properties markedly differ within species and strains [4].

The current commercial expansion in the use of probiotic bacteria in functional foods must be accompanied by new knowledge and exploration of new concepts, together with the study in depth of how these bacteria may be influenced by different factors inherent to technological processes, the physicochemical environment of food, and the gastrointestinal transit. In this sense, the traditional concept of control of cell viability as a tool for determining the probiotic value of the food must be complemented by an assessment of the functionality of the strain included in a particular food. Only in that way will it be possible to ensure that the food product is really functional, beyond the functional value that has been reported for the probiotic strain alone [2].

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