



# ODESSA NATIONAL ACADEMY OF FOOD TECHNOLOGIES

## DEVELOPMENT OF THE TECHNOLOGY OF FUNCTIONALITY HARD CHEESE

### Purpose and scope

The work is devoted to scientific justification and development of the technology of pressed hard cheese with *Bifidobacteria* with low temperature of second heating and high levels of lactic acid fermentation with the use of starter compositions with *Bifidobacteria* and *Lactobacteria*.

### Main characteristics and the development essence

The starter compositions with mixed cultures of *Lactobacteria* in the composition of the starter *FD DVS DCC-250* and pure cultures/mixed cultures of *Bifidobacteria* in the composition of the starter *FD DVS Bb-12* in the production of functionality hard cheeses has been developed. Research proved the feasibility of using high-temperature heat treatment regime of the normalized mixture in the production of functionality hard cheeses to improve the effectiveness of pasteurization, the product yield and bioavailability of the base product.

### Comparison with the world's analogues, the main development advantages

Reducing the salting process to  $15 \pm 1$  hour (2 ... 2,5 days - for a traditional of cheese) and the duration of ripening functionality hard cheese up to  $30 \pm 2$  days (45-60 days - for a traditional of cheese) through the use of *Bifidobacteria* in the composition of the starter for its production has been experimentally proved. Biomedical research proved the feasibility and prospects of using the developed base product as a functional with probiotic and hepatoprotective effects. In Ukraine there are no analogues.

### The intellectual property protection status

Novel technologies are confirmed by the declaration patents of Ukraine for invention No. 96105 «Production process of hard rennet pressed cheese of functional application» and for utility model No.61051 « Production process of hard rennet pressed cheese of functional application».

### Demand in the market

Market on a new product, as dysbiosis in Ukraine suffers 75 ... 90% of the adult population.

### The readiness for development status

Recipes, technology and normative documents on the production ripening functionality hard cheese have been developed, and industrial approbation of the developed technology has been accomplished. The technologies for small-scale production, the technology is ready for industrial application. Industrial tests of the technique have been conducted at the LLC "Agrocom" (Ananiev, Odessa region).



Functionality hard cheese

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