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BIOLOGICAL PROPERTIES OF VEGETABLE PRODUCTS RESIDUAL MICROBIOTA FROM SOUTHERN REGIONS OF UKRAINE.

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Objective: To study the biological properties of the heat-resistant spore-forming bacteria of vegetable products in southern regions of Ukraine and to identify them using the classic and molecular-biological methods.

The vegetable products microbiota of the vegetable feed (carrots, marrows, aubergines, tomatoes) breeded in Ukraine and raised in Odessa region has been examined. 23 strains of heat-resistant spore-forming bacteria were isolated. The study of their morpho-physiological, tinctorial, and some biochemical properties made it possible to define their genus as Bacillus, and specific phenotypic properties - as certain species. The species identity of isolated strains was verified by the fatty-acid analysis using the automatic microbial identification system MIDI Sherlock (USA) based on the Agilent 7890 gas chromatograph (USA).

It was shown that the content of branched fatty acids in the examined bacilli ranged from 54 to 85% of the total fatty-acid cells pool, including both saturated and unsaturated acids with predominance of iso-C15:0 and anteiso-C15:0. Bacilli strains were also characterized by a high content of anteiso-C 17: 0, and iso-C17:0 fatty acids. According to the identification results the isolated strains of bacteria of the *Bacillus* genus were labeled as the following types: *Bacillus thuringiensis* ssp. israelensis, *B. subtilis*, *B. cereus* GC subgroup A, *B. pumilus* GC subgroup B, *B. atrophaeus*, *Lysinibacillus sphaericus* GC subgroup E, *Paenibacillus larvae* ssp. pulvifaciens, *Virgibacillus pantothenticus*, *Brevibacillus choshinensis*.

The species belonging of the three strains of *Bacillus* sp., which according to the fatty acids chromatography results were identified as controversial by the *B. cereus* and *B. thuringiensis* types, was verified by carrying out the PCR (polymerase chain reaction) applying primers to bacilli sequences. In the event of the PCR with two pairs of primers, the amplicons were formed only in case of the BCGSH primers usage, which indicated that the tested strains belonged to the *B. cereus* group. The amplicon size was 400 bp, thus indicating an adequate specificity of the PCR.