

## ANTIMICROBIAL ACTIVITY OF LACTOBACILLI STRAINS, ISOLATED FROM A RAW MEAT

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Foodstuffs produced with the help of commercially valuable strains of microorganisms, primarily lactic acid bacteria, become more popular and widespread nowadays. Searching, isolation and selection of highly active strains of lacto- and bifidobacteria is one of the perspective ways of creating the new products.

The aim of the following investigation was isolation of a bacteria of *Lactobacillus* genus from a raw meat and the study of their antagonistic properties.

The beef samples were the materials of that study. Lactobacilli were isolated by the way of fivefold reseeds of the samples into sterile skimmed milk, followed by seeding on solid and liquid medium of MRS and studying of main biological properties. The antagonistic properties of the isolated strains against collection opportunistic (*Escherichia coli*, *Proteus vulgaris*, *Staphylococcus aureus*, *Bacillus cereus*) and pathogenic (*Salmonella enteritidis*) bacteria, as well as bacteria isolated from a raw meat (*Bacillus* sp. 1, 2, 3, *Kurthia* sp., *Planacoccus* sp. 1, 2, *Micrococcus* sp. 1, 2, *Sarcina* sp., *Staphylococcus* sp.) were determined.

In the result of the following research 6 strains of the bacteria were isolated from 15 raw meat samples. Studying of main biological properties helped to identify them as members of *Lactobacillus* genus. The isolated strains were named *Lactobacillus* sp. M1, M2, M3, M4, M5, M6.

Researches of antimicrobial activity towards the collection test-strains showed that the strain *S. enteritidis* demonstrated the most sensitivity to metabolites of isolated lactobacilli. Zones of growth inhibition of this strain were minimal ( $15 \pm 1$  mm) by impact of *Lactobacillus* sp. M5 and maximal ( $27 \pm 1$  mm) by presence of *Lactobacillus* sp. M1 and M6. Strain *E. coli* was also highly sensitive, growth inhibition zones of which varied from  $18 \pm 2$  mm to  $23 \pm 1$  mm depending on the lactobacilli strain. It was found that all strains of lactobacilli were significantly inhibiting the growth of *Planacoccus* sp. 1, *Micrococcus* sp. 2, *Staphylococcus* sp. and *Sarcina* sp. isolated from a raw meat. The sizes of growth inhibition zones, as in the case with the collection test-strains depended both on the indicator strain, and the lactobacilli strain. Maximum zone of growth inhibition ( $35 \pm 2$  mm) was determined for *Sarcina* sp. with presence of *Lactobacillus* sp. M6. The most resistant to the metabolites of lactobacilli were members of the genus *Bacillus*. The strain of *Lactobacillus* sp. M6 showed the greatest antimicrobial activity against all the indicator bacteria. Thus, strains of bacteria of *Lactobacillus* genus were isolated from a raw meat demonstrated high inhibitory effect against to the majority of researched test-strains of bacteria. That fact indicates the expediency of their further studying with the aim of creating the new products.