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CONTAMINATION OF RAW MILK WITH CONDITIONALLY PATHOGENIC MICROORGANISMS AND ANTIBIOTICS

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ABSTRACT

Milk quality is influenced by the nature of animal feeding, genetic potential, as well as the hygiene level in the process of obtaining it, which affects the presence of mechanical impurities and bacteria. The uncontrolled use of drugs is often accompanied by their appearance in milk, which affects not only the product quality, but also makes it unsuitable for further use and consumption. The aim of this work was to study the contamination of raw milk with bacteria and antibiotics. During 2019-2020, 425 milk samples were subjected to laboratory tests, of which 407 were tested for the presence of antibiotics. It was found that 58.12% of raw milk samples for microbiological examination are received from June to October. More than half of all samples containing microorganisms were found from May to August. At the same time, the highest microbial contamination was determined in July and August (65.4% and 54.0% of all examined samples, respectively), and the lowest one was determined from September to November (30.6%, 34.7% and 34.3%, respectively). Staphylococcus spp. 41.6%, the bacteria of the Escherichia coli group - 35.4% and Streptococcus spp. - 21.4% dominated among the microorganisms found in raw milk. It was revealed that 55.28% of raw milk samples delivered to the laboratory were contaminated with antibiotics. The most common antibiotic found in raw milk is amoxicillin (38.67% of all samples containing antibiotics), doxycycline was the second one by occurrence (20.89%), then erythromycin and azithromycin were presented (10.67% each). Levofloxacin was less common and it found in 8.44% of milk samples with antibiotics; in rare cases, the presence of streptomycin (6.22%) and trimethaprim (4.44%) was recorded. The most common use of antibiotics was during the summer. On the contrary, the cases of antibiotic detection in raw milk are rare during winter.

Key words: raw milk, contamination, seasonality, antibiotics, Staphylococcus, Streptococcus.