

ANTIMICROBIAL ACTIVITY OF YOGHURT MADE USING A MIXTURE OF COWS AND GOATS MILK WITH BERRIES PUREE

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The quality of yoghurt is a priority requirement in the Moldovan economy. In the dairy industry, this requirement is becoming increasingly stringent in order to ensure impeccable sanitary quality and without risk of economic losses. One of the functional properties of yogurt is antimicrobial activity, produced by the fermentation process during manufacture. The existence of antimicrobial activity, using the diameter of the inhibition zone, indicates that the bacteria tested cannot grow around the disk. The ability to inhibit the growth of pathogenic microorganisms is a valuable microbiological property for guarantee the quality and safety of yogurt. The presence of lactic acid bacteria and ingredients of vegetal origin in yogurt have the ability to produce a high number of compounds with antimicrobial activity against certain pathogenic bacteria such as *Bacillus cereus*, *Clostridium botulinum*, *Clostridium perfringens*, *Listeria monocytogenes*, *Staphylococcus aureus*, etc. Some of the most important and well-known compounds involved in antimicrobial activity are organic acids. They inhibit the growth of pathogenic bacteria by modification of the pH, thus providing an acidic environment unfavourable to the growth of the *Bacillus cereus* pathogenic bacteria. In the present research, yogurt was obtained from a mixture of cow's and goat's milk in a ratio of 1:1 with the addition of 10% aronia berries (*Aronia melanocarpa*, variety Nero), raspberry berries (*Rubus idaeus*, variety Cusma lui Guguta) and strawberry berries (*Fragaria xananassa*, variety Selva) under laboratory conditions using the thermostat method. According to the obtained results, the possibility of inhibiting the growth of *Bacillus cereus* pathogenic bacteria presented a valuable microbiological property for ensuring the quality and safety of yogurt. Compared with yogurt without addition, the inhibition zone of yogurt sample with 10% aronia addition increased by 1.8 fold, of yogurt sample with 10% raspberry addition increased by 1.6 fold and of yogurt sample with 10% strawberry addition increased by 1.3 fold. These results were positively influenced by the high biological value of the berries due to the content of organic acids, polyphenols, antioxidants, vitamins, anthocyanins, etc. which contributed substantially to the antimicrobial activity of the yogurt. The addition of ingredients of vegetal origin showed a noticeable effect and good action against of *Bacillus cereus* pathogenic bacteria.

Keywords: yogurt, lactic acid bacteria, inhibition zone, bacteria, spoilage

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