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# Antimicrobial Effects of Berries on *Listeria monocytogenes*

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## Abstract

The purpose of this study was to first evaluate the antimicrobial effects of powder and extracts of berries (rose-hip, aronia, sea buckthorn and hawthorn) on the development of antibiotic-resistant *L. monocitogenes*. *Listeria monocytogenes* is considered one of the most important pathogens responsible for food-borne infection. Antimicrobial properties were evaluated using the standard Kirby-Bauer disk diffusion method. Bacterial inactivation networks were determined and compared, as well as the possibility of using powders and extracts of berries to control the risk of *Listeria monocytogees* infestation in the milk and dairy industry as well as in the meat industry. The effect of pH (4.78 - 4.43) and water activity (0.90 - 0.80) on the relationship between optical density (OD) at 600 nm and the plate count (CFU $ml^{-1}$) was investigated for *Listeria monocytogenes*. It was determined Minimum Inhibitory Concentration (MIC), Minimum Bactericidal Concentration (MBC) of berries for *L. monocytogenes*. The most relevant bacteriostatic and bactericidal effect on *L. monocytogenes* in the tested berries demonstrated sea buckthorn and rosehip.

## Keywords

*L. monocitogenes*, Berries, Kirby-Bauer Test, Minimum Inhibitory Concentration (MIC), Minimum Bactericidal Concentration (MBC)

## 1. Introduction

*Listeria monocytogenes* is considered one of the most important pathogens responsible for food-borne infection. It is often incriminated in outbreaks of human listeriosis [1] [2]. *Listeria monocytogenes* is a foodborne pathogen that can cause invasive severe human illness (listeriosis) in susceptible patients. Most

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