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Czech J. Food Sci.

**Smetanková J.,
Hladíková Z.,**

Zimánová M., Greifová M.,
Greifová M.:

Lactobacilli isolated from lump sheep' s cheeses and their antimicrobial properties

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A total of 34 strains of lactobacilli were isolated from the lump sheep' s cheeses produced from raw sheep milk. The strains were identified by MALDI-TOF MS, and 20 of them demonstrating the best fermentation and sensoric properties in milk were chosen and tested for their antimicrobial activity. All selected strains were active against the indicator bacteria and moulds. The highest inhibitory effect was observed with the strains *Lactobacillus paracasei* 314, *L. paracasei* 316, *L. plantarum* K816, *L. plantarum* L718, and *L. plantarum* 2L2. The subsequent research was focused on the metabolites causing this inhibition. The production of lactic and acetic acids was studied under different cultivation conditions (0, 2, 4, and

6.5% NaCl addition; cultivation at 15, 30, 37, and 45° C; and pH value of the broth before sterilisation 5 and 9). *L. plantarum* L718 produced the highest concentration of lactic and acetic acids under most of the cultivation conditions. Antimicrobial substances such as phenyllactic acid (62.54– 101.62 mg/dm³), H₂O₂ (0.78– 2.30 µg/cm³), and diacetyl (produced by *L. plantarum* K816 and L718) were studied as well.

Keywords:

Lactobacillus plantarum; *Lactobacillus paracasei*; antimicrobial potential

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