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Application of lactic acid bacteria for production of fermented beverages based on rice flour

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<https://doi.org/10.17221/74/2015-CJFS>

Citation: Magala M., Kohajdová Z., Karovičová J., Greifová M., Hojerová J. (2015): Application of lactic acid bacteria for production of fermented beverages based on rice flour. *Czech J. Food Sci.*, 33: 458-463.

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We investigated the suitability of rice flour for fermented beverage production using various strains of lactic acid bacteria. Fermentation led to a decrease in pH from 5.04–5.17 to 3.74–4.35. At the same time, total acidity increased (1.28–2.59 g/l) due to lactic acid (0.59–2.76 g/l) and acetic acid (0.11–0.30 g/l) production. Fermentation of rice beverages also caused a gradual decrease in glucose and fructose concentration. Lactic acid bacteria proliferated in the first phases of fermentation, and cell counts reached a maximum after 12 h. The highest growth rate ($v_{LAB} = 0.44 \text{ Log}_{10} \text{ CFU/ml/h}$) was observed in a sample with the culture of *Lactobacillus brevis* CCM 1815. Viscosity of beverages decreased significantly after 24 h of fermentation. The highest values of sensory parameters were observed in a monoculture of *Lactobacillus plantarum* CCM 7039 and in a sample with a mixed culture of *Lactobacillus plantarum* CCM 7039 and *Bifidobacterium longum* CCM 4990.

Keywords:

cITP; HPLC; fermentation; rice; sensory analysis; viscosity

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