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Modeling of lactic acid fermentation of leguminous plant juices

Shurkhno R., Validov S., Boronin A., Naumova R.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Lactic acid fermentation of leguminous plant juices was modeled to provide a comparative efficiency assessment of the previously selected strains of lactic acid bacteria as potential components of starter cultures. Juices of the legumes fodder galega, red clover, and alfalfa were subjected to lactic acid fermentation in 27 variants of the experiment. Local strains (*Lactobacillus* sp. RS 2, *Lactobacillus* sp. RS 3, and *Lactobacillus* sp. RS 4) and the collection strain *Lactobacillus plantarum* BS 933 appeared the most efficient (with reference to the rate and degree of acidogenesis, ratio of lactic and acetic acids, and dynamics of microflora) in fermenting fodder galega juice; *Lactobacillus* sp. RS 1, *Lactobacillus* sp. RS 2, *Lactobacillus* sp. RS 3, *Lactobacillus* sp. RS 4, and *L. plantarum* BS 933 were the most efficient for red clover juice. Correction of alfalfa juice fermentation using the tested lactic acid bacterial strains appeared inefficient, which is explainable by its increased protein content and a low level of acids produced during fermentation. © MAIK "Nauka/Interperiodica", 2006.

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