

Applied Biochemistry and Microbiology 2005 vol.41 N1, pages 69-78

Fermentation of high-protein plant biomass by introduction of lactic acid bacteria

Shurkhno R., Gareev R., Abul'khanov A., Validov S., Boronin A., Naumova R.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Lactic acid bacteria displaying increased ability to produce lactic acid, medium proteolytic activity, and tolerance to osmotic stress were isolated under selective conditions from phyllosphere and rhizosphere of registered and raised cultivars of legumes. Lactic fermentation of poorly ensilable leguminous plants (red clover and Caucasian goat's rue) was performed by introduction of rifampin-resistant homofermenting representatives of the genus *Lactobacillus* (selected according to a set of technologically important characteristics). The results demonstrate that introduction of active local strains of lactobacteria, as well as the collection strain *Lactobacillus plantarum* BS933, enhances activation of ensiling and increases the quality of fodder, as assessed according to the standard criteria (a decrease in pH of the medium, the ratio of lactic acid to fatty acid homologues, and the composition of silage microflora). © 2005 MAIK "Nauka/Interperiodica".

<http://dx.doi.org/10.1007/s10438-005-0013-9>
