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Isolation and Identification of the Acetic Acid Bacteria from Industrial High-Acid Vinegar Fermentation

Mi-Hwa Park[1*], Dong-Kyu Lyu[2] and Chung-Ho Ryu[1].
[1]Department of Food Science and Technology, Gyeongsang National University, [2]MIWON CO., LTD.

Acetic acid bacteria were isolated from industrial submerged high-acid vinegar fermentation and characterization. Cultivation on the double-layer plate under >90% relative humidity is necessary for the formation of the high-acidity bacterial colonies. In optimized medium(AE medium), the strains grew at temperatures ranging from 20 to 34℃, with an optimum of 30℃, and at pH values ranging between 2.2 and 3.0, with optimum of pH 2.7. The strains was rod-shaped whose cell was small, pale, absolutely aerobic and Gram-positive. The color of the colony was beige-yellowish. Microscopically the cells appeared as non-motile and non-flagellated, preferentially occuring in pairs. As a plasmid is a strain specific characteristic for acetic acid bacteria, plasmids of strains were isolated and identified.

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Lactic Acid Fermentation of Full Fat Active Soybean Milk

Sam-Pin Lee* and Joseph Baek. Dept. of Food Science and Technology, Keimyung University

A 5% of full fat active soybean (FAS) milk was prepared with full fat active soybean fluor. FAS milk was fermented by lactic acid bacteria such as *L. acidophilus*, *L. plantarum*, *Leuc. mesenteroides*, Kefir and *Streptococcus* sp. (LL, LS). Acidity, viable cell counts and pH were determined from FAS milk fermented for 20hr. Kefir, *L. plantarum*, *Strep.* sp. (LS, LL), *L. acidophilus* showed the acidity of 0.52%, 0.37%, 0.42% and 0.29%, respectively. Viable cell counts of lactic acid bacteria were about 4-9 x 10^9 cfu/ml. *Strep.* sp. (LL, LS) were able to form the curd of FAS milk but not with 5% skim milk. LL strain could grow on MRA plate at 45℃. LL and LS strain enhanced the acid production in FAS milk by fermentation at 37℃ than 30℃. In lactic acid fermenation at 37℃ for 20hr, Both LL and LS strain indicated about 0.55% of acidity in 5% skim milk, but 0.35% in 5% FAS milk. The acidity of FAS milk was increased to 0.45% by addition of skim milk. The pH of FAS milk was dropped from 5.3 to 4.4 and FAS milk fortified with 20% skim milk indicated pH 3.9.