

P7-05

Inhibitory Effect of Food Additives on Biogenic Amine Production in Myeolchi-jeot, Korean Salted and Fermented Anchovy

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This study was performed to control biogenic amine production derived from bacteria in Myeolchi-jeot, Korean salted and fermented anchovy. Of 314 strains isolated from different Myeolchi-jeot samples, four bacilli strains were selected as strong producer of biogenic amine, and used for the determination of the inhibitory effects of food additives on biogenic amine production. Seven types of food additives including sucrose, glucose, sorbitol, glycine, lactic acid, citric acid, sorbic acid at varying levels were added to the assay medium, and biogenic amine contents in the culture of the tested strains were determined by HPLC. The highest inhibitory effect on biogenic amine production was observed in the culture treated by glycine, and followed by glucose, sucrose, sorbic acid, sorbitol, lactic acid and citric acid. While, biogenic amine production of the tested strains was occasionally enhanced by treatment of sorbitol, lactic acid, citric acid and sorbic acid. Therefore, glycine was finally applied to the ripening of Myeolchi-jeot *in situ*, because it not only showed the highest inhibitory effect on biogenic amine production, but it also had no function as an stimulator for biogenic amine production for all of the strains tested. To prepare Myeolchi-jeot, salt was added at the level of 20% to raw anchovy, and then allowed to ferment for 10 weeks at 25°C, which was used as the control. Myeolchi-jeot treated by glycine was also ripened by the same method as the control. Consequently, biogenic amine production by microorganisms in Myeolchi-jeot was dramatically diminished. Furthermore, the developed control technology could bring the increasement of shelf-life of salted and fermented fish products because the production of putrefactive amine such as putrescine and cadaverine was apparently delayed.

P7-06

Characterization of Lactic Acid Bacteria Isolated from Korean Traditional Soybean Products

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This study was performed to develop a soybean product (NFS) fermented by curd-forming lactic acid bacteria. For the screening curd-forming lactic acid bacteria, 1920 strains were isolated from different samples of Korean traditional soybean products, and then 154 strains showed the similarity to lactic acid bacteria on the modified MRS agar medium. To screen candidates as a starter culture, the 154 strains were examined for formation of curd and fermentation of carbohydrates including glucose, lactose, maltose, raffinose and sucrose. As the result, 20 strains were selected as a potential starter culture because of its capability to strongly form curd from soybean protein. In addition, some strains showed proteolytic activity. The strains were characterized as lactic acid bacteria according to the Bergey's Manual. Using API kit, the strains were identified as *Streptococcus*, *Leuconostoc* and *Lactobacillus*. While, the activities for production of biogenic amines by the strains were performed on differential agar media to prove safety for human consumption. As the result, the strains did not show abilities to produce biogenic amines. Consequently, the selected 20 strains may be useful for starter culture to produce NFS. The starter culture candidates of the strains will be furtherly applied to NFS *in situ*.