Enhancement of Flavor and Taste by Fermenting Coffee Beans with Six Mixed Microbes from Traditional Korean Liquors

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The interest and demand for fermented coffees with unique tastes and aromas are increasing every year. Highly valued ones are naturally fermented in the intestines of wild civet cats, which causes low production capacity as well as animal cruelty for more and easier production in captivity. In addition, the fermentation by caged animals is not uniform so the tastes and flavors. To alleviate the problem of animal cruelty and standardize the fermentation process, we utilized microorganisms originated in traditional liquor industry. We isolated several microbes from traditionally fermented liquors, and inoculated onto coffee beans, followed by comparison of several chemical properties before and after fermentation. They included overall chemical contents, caffeine profiles, and chlorogenic acid contents, acidity and total acids, measured by FT-IR, H-NMR, HPLC, amino nitrogen, or pH measuring methods. There were clear indications of changes in chemical composition, such as the reduction of caffeine and amino acids but the increase of chlorogenic acids among other changes, probably leading to the enhancement of flavors and aroma after fermentation. This study provides an evidence that microbes originated in traditional liquor fermentation are additional sources for the production of exotic coffees to the existing fermented ones and that diverse liquors fermented by traditional methods also deserve further attention from general public.