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Flavor Compounds of Cholesterol-Reduced Cheddar Cheese Slurries

Kwak, H.S., Chung, C. S and Ahn, J.
Department of Food Science and Technology, Sejong University

This study was carried out to find the difference in flavor compounds of cholesterol-reduced Cheddar cheese slurries. The milk for cheese slurries was made by 3 different treatments as followings: 1) Control (no homogenization and -CD treatment), 2) Trt A (1000psi homogenization following by 1% -CD) and 3) Trt B (cream separation following by 10% -CD, and homogenized at 1000psi). The cheese slurries were aged at 32C for 3 wk. The cholesterol removals of the cheese slurries were 79.30% (Trt A) and 91.22% (Trt B). The amounts of acetone and ethylacetate were slightly increased in control at 3 wk, however, no difference was found in other flavor compounds. Ethanol production was dramatically increase at 1 wk and decreased thereafter in all treatments. The production of short-chain fatty acids (SCFA) was significantly increased with storage time in all treatments. Especially, total amount of SCFA was dramatically increased at 2 wk and maintained that increase thereafter in control group.

Based on our results, cheese slurries made by the cheese milk after cream separation (36% milk fat) and 10% -CD treatment showed a highest cholesterol removal rate. Little difference was found compared with control in flavor compound production except 2-ethylhexanoic acid. Lower amount of SCFA was found in Trt A and B in 2 and 3 wk that it may indicate a certain amount of SCFA was decreased during -CD treatment.