P - 201

An Accelerated Cheese Ripening in Cholesterol-Reduced Cheddar Cheese by β-cyclodextrin

Chung-Song Jung, Hye-Jeong Ahn, Joungjwa Ahn and Hae-Soo Kwak
Department of Food Science and Technology, Sejong University

This study was carried out to find whether cheese ripening process was accelerated in cholesterol-reduced Cheddar cheese or not, which made by cream separation following by 10% β-CD treatment. The cholesterol removal rate of the cholesterol-reduced cheese was 91.9%. The production of short-chain free fatty acids (FFA) increased with ripening time in both control and experimental cheeses. The short-chain FFA data showed that cholesterol-reduced cheese ripened for 2 and 4 wk released a similar amount of FFA in control cheese ripened for 16 wk (4 mo) and 24 wk (6 mo). With ripening period, the increase of neutral volatile compounds, especially, acetaldehyde, acetone, ethanol and 2-heptanone was more profound in control than in β-CD treated group. In addition, cholesterol-reduced Cheddar cheese produced much higher total free amino acid and bitter amino acids than control during all ripening periods. In sensory analysis, texture score of control Cheddar cheese showed an increasing trend with 32 wk ripening, however, that in β-CD treatment group decreased during a ripening period (8 wk). Above results indicated that the cholesterol-reduced cheese made by β-CD treated cream resulted additionally in an accelerated ripening means.