P - 210

Cheddar Cheese Made from Homogenized and β-Cyclodextrin-treated Milk

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This study was carried out to find a cholesterol removal rate, flavor development, and bitter amino acid productions in Cheddar cheese treated with β-cyclodextrin (CD): 1) Control (no homogenization, no β-CD), and 2) Milk treatment (1000 psi milk homogenization, 1% β-CD). The cholesterol removal of the cheese were 79.3%. The production of short-chain free fatty acids (FFA) increased with a ripening time in both control and milk treated cheese. The releasing quantity of short-chain FFA was higher din milk treated cheese than control at 5 and 7 mo ripening. Not much difference was found in neutral volatile compounds production between samples. In bitter-tasted amino acids, milk treatment group produced much higher than control. In sensory analysis, texture score of control Cheddar cheese significantly increased, however, that in cholesterol-reduced cheese decreased dramatically with ripening time. Our results indicated that the cheese made by β-CD treated milk at low pressure homogenization showed an effective cholesterol reduction and a rapid cheese ripening, while no capture of flavor compounds by β-CD.