

Emulsifying Properties of Casein Hydrolyzates in Process Cheese

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Casein hydrolyzates were studied for their emulsifying property in process cheese. Sodium caseinate was hydrolyzed into α_{s1} -casein(f1-23), α_{s1} -casein(f24-199) and β -casein(f1-189) by pepsin. Four hours were sufficient time to produce those peptides. Emulsifying activity and creaming stability during hydrolyzing sodium caseinate increased enough after 4 h. In chemical composition of process cheese, natural emulsifier added samples were not significantly different from control. But the amount of ash decreased. pH of the experimental cheese ranged from 5.73 to 5.93 which were slightly lower than control (pH 6.30). The oil-off value of sample containing natural emulsifier and chemical emulsifier with 1:1 ratio was significantly higher than control and the value in the sample with 3:1 was highest in the samples. The meltability of the 2:1 and 3:1 (H+C) and 1:1 and 2:1 (S+C) samples was similar to control but other samples (H+C 1:1 and S+C 3:1) were significantly higher than control. In sensory test, the cheese flavor and texture score of the treated samples were not significantly different from control. A mixture of the natural and chemical emulsifier appeared to be effective in improving the emulsifying property in process cheese.