

# Axial Compression Properties of Calcium Caseinate Gels

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The wide range of physicochemical and functional properties of caseins and caseinates, as well as their bland flavor, make them an excellent protein source for the creation of formulated foods, either as novel or imitative products. The gelation properties of these highly nutritive proteins were investigated to determine their potential for the creation or imitation of high value products such as kamaboko, a surimi product. Instrumental texture profile analyses and stress-strain relationships were evaluated to determine the textural responses of caseinate gels with various additives. The addition of sodium hexametaphosphate (.5%, wt/wt) was effective in creating firm, elastic gels that more closely resembled many of the textural properties of kamaboko. The addition of  $\kappa$ -carrageenan with the phosphate markedly improved gel cohesiveness, springiness, water holding, and foldability. The elasticity and recoverable energy of these gels were also improved, but these gels were not as elastic as kamaboko.

Key Words: texture • kamaboko • surimi • gels • rheology

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