

Effects of heating and mineral supplementation on the physical properties of rennet- induced coagulation of camel and cow milk gels

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Summary: The physical properties of rennet-induced coagulation of preheated camel and cow milk (50 and 70 °C for 10 min) enriched with calcium chloride (CaCl₂) and hydrogen phosphate dihydrate (Na₂HPO₄·2H₂O) were evaluated using the dynamic low amplitude oscillatory shear analysis. The storage modulus (G') and loss modulus (G'') of camel milk gels showed significant ($p < 0.05$) lower values than those of cow milk gels. The increase of the intensity of camel milk heating induced an adverse impact on the gelation properties, while no effect was observed on the gelation properties of cow milk. CaCl₂ added at 10 and 20 mM to preheated camel and cow milk reduced significantly ($p < 0.05$) the gelation time and increased the gel firmness. In contrast, Na₂HPO₄·2H₂O added at 10 and 20 mM allowed the formation of weak gels for preheated camel and cow milk at 50 °C, even no gelation for preheated camel milk at 70 °C.