

How does reducing sodium impact the proteolysis and texture in salted meat along 180 days of shelf life?

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Abstract

Sodium reduction in salted meat is a major technological challenge due to the technological functions of NaCl, responsible for the reduction of water activity and consequent microbiological safety, stability during shelf life, sensory characteristics, proteolysis and lipolysis. The objective of this research is to evaluate the effects of partial replacement of NaCl by KCl and CaCl₂ in the texture properties during 180 days of storage in salted meat. During 180 days of storage, a significant decrease ($P < 0.05$) of shear force values have been observed in all treatments. The electrophoretic images suggest that CaCl₂ can promote denaturation of high molecular weight proteins resulting in lower molecular weight proteins. The results showed the intense effects of CaCl₂ on texture and proteolysis reactions and the blend NaCl + KCl produced a similar impact to salted meat product compared to control treatment (100% NaCl).

Author keywords

Calcium chloride
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Proteolysis
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