

Substitution effects of NaCl by KCl and CaCl₂ on lipolysis of salted meat

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The objective of this study was to investigate the reduction and partial substitution effects of sodium chloride (NaCl) by potassium chloride (KCl) and calcium chloride (CaCl₂) on lipolysis and lipid oxidation in salted meat aiming at reducing sodium content. To evaluate the effect of different salts on lipid oxidation thiobarbituric acid-reactive substances (TBARs) assay was performed along 180 days. Furthermore, ESI-MS/MS and GC analysis were conducted to detect and identify oxidized lipids, volatile compounds and free fatty acids profiles during the meat processing time. Lipid profiles from different salted meat demonstrated that CaCl₂ salt have induced more lipid oxidation when compared to the combination of NaCl and KCl salts, highlighting the implication of CaCl₂ on increased lipolysis reactions. Moreover, the obtained results from both the analyses suggest that a combination of NaCl and KCl salts can be a good alternative for reducing the sodium content without compromising the quality of the salted meat. © 2019 by the authors.

Fatty acids

Lipid oxidation

Lipolysis

Mass spectrometry

Salt substitutes

Salted meat