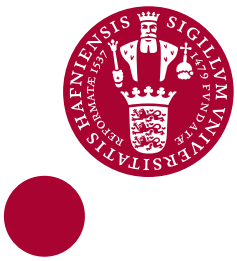

Investigating the microbial stability of sodium-reduced RTE cooked meat product under refrigerated and abuse storage temperatures

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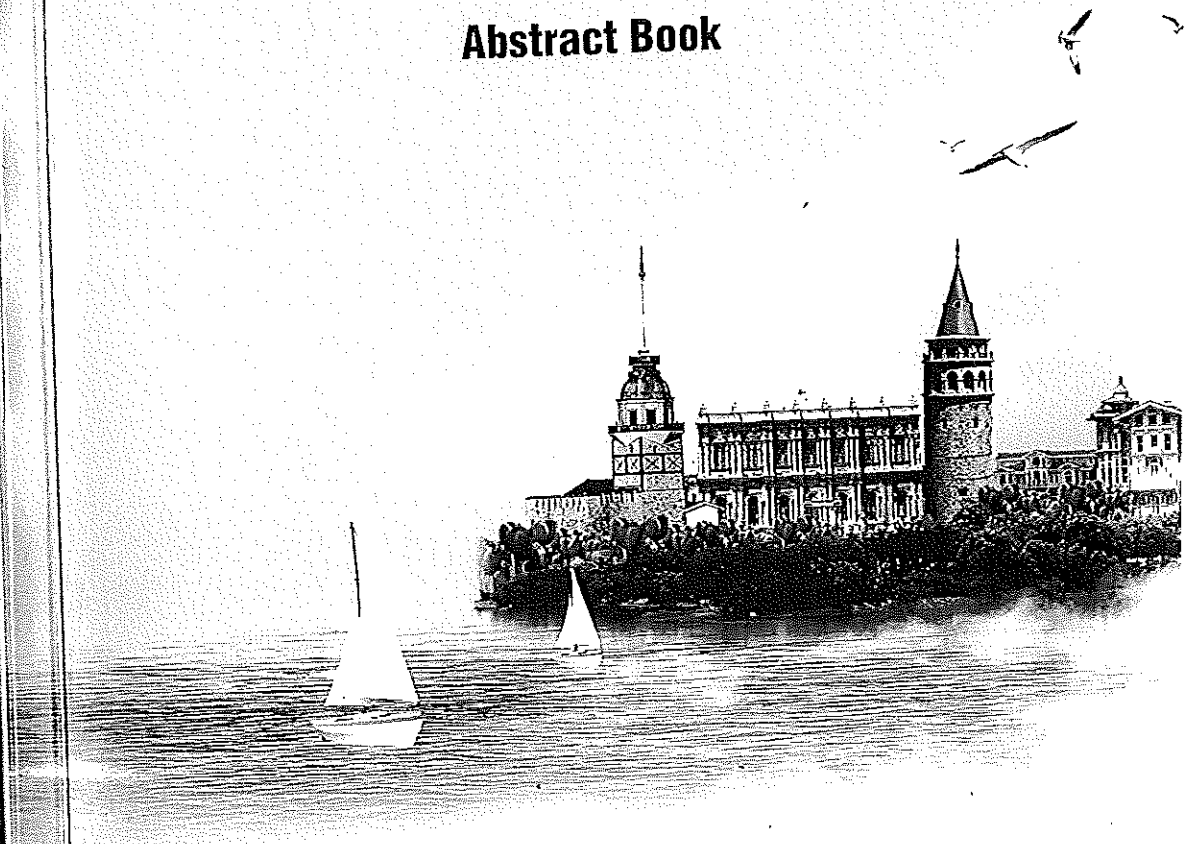

FoodMicro

3-7 SEPTEMBER 2012 ISTANBUL

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ɜst before' on pre-packed

DEVLIEGHERE, Liesbeth

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ɔrm consumers on the acceptability of
tates two types of shelf life dates are
able food products and related to both
efore' date linked to microbiological
ɜensorial quality aspects (Directive
erence between these 2 types of shelf
ıe survey (n=860), Belgian consumers
fe dates, and also on the degree they
l consuming food products. Although
concepts 'use by' and 'best before'
ɔo types of shelf life dates. 29.5% of
ld offer expired products they would
factors such as degree of expiry, type
ımption of food products at home, a
l consume products after the expiry
ish to be cooked (15%), mayonnaise
%), cookies (88%) and rice (91%)
k into account. However, in certain
sessed by the consumer in particular
imately one third of the surveyed
n the 'use by' dates and 'best before'
by consumers but on the other hand
erstanding of the shelf life dates 'use
lates (referring to food quality) by
tion and education by governmental

3-7 458

P-271

Investigating the microbial stability of sodium-reduced RTE cooked meat product under refrigerated and abuse storage temperatures

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The microbiological food safety and quality implications on sodium chloride (NaCl) reduction in foods has been slightly researched and has received little attention, devoting to study beneficial cardiovascular health impacts and the effects of salt reduction on food taste and on consumers' acceptance. However, a reduction in hurdles, such an increase in water activity and a decrease in osmotic stress, may lead to accelerated spoilage or a faster growth of pathogenic bacteria. The objective of this study was to determine how salt reduction affects the microbial stability of a cooked meat product and its interaction with storage temperature. Cooked turkey breasts were prepared using two formulations: Normal (N) content of NaCl (2.5%) and reduced (R) sodium (0% NaCl, 1.2% KCl). Product was vacuum-packaged and stored under refrigeration (4°C) and abusive (8°C) temperature during three weeks. Water activity, pH, Total viable (TVC), Enterobacteriaceae and lactic acid bacteria (LAB) counts, and microbiota diversity fingerprint by DGGE was performed. NaCl content exerted a lower influence on growth of TVC and Enterobacteriaceae compared to temperature effect. However, its presence on formulation delayed significantly growth of LAB at refrigerated conditions. On the first days, microbial diversity remained similar between the different treatments, however, first changes on microbiota diversity were affected by salt content, and it was maintained until day 10. From day 14, it was possible to observe a 'factor shift' in the results of cluster analysis. Microbial diversity of the cooked meat product started to be affected, in a higher extent by storage temperature. As storage time went on, clustering according to storage temperature was noticeable. There was not a clear subgrouping according to salt content into each storage-temperature cluster. The results of this study showed that storage temperature exerted a higher influence on microbiological counts than salt content, in agreement with some authors who suggest that the use of other technologies, such as refrigeration, have largely replaced the need for sodium salts as food preservatives. However, microbial diversity dynamics depended on salt content at early stages of storage; hence the effect of salt content should be considered on product shelf-life.