Public release date: 3-Sep-2007

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Society for General Microbiology

Cutting salt does not reduce processed food safety say scientists

Low salt foods are just as safe or safer than high salt level products in spite of expectations that cutting salt levels in food would increase the risk of spoilage by bacteria, say scientists today (Tuesday 4 September 2007) at the Society for General Microbiology's 161st Meeting at the University of Edinburgh, UK, which runs from 3-6 September 2007.

Because of the known link between heart disease and high salt diets, food manufacturers have come under increasing pressure from health protection agencies to reduce the salt levels in their products. But reducing salt could also be expected to increase the risk of food spoiling, since salt is an ancient and widely used preservative.

Scientists from the University of Limerick in Ireland checked safety levels of low salt foods by studying the behaviour of different strains of food spoilage bacteria inoculated into model systems.

"In general we discovered that the growth of different sorts of typical food spoilage bacteria was unaffected by the various salt levels we tested, which means that low salt foods are just as safe as conventionally processed ones" says Edel Durack.

All the bacteria studied were capable of growing in the highest concentration of salt used by the scientists at 3%. Even at this level of salt none of the bacteria experienced any difficulty in surviving for 24 hours. The researchers did find differences between the salt tolerances of all the bacteria tested, with some strains actually exhibiting greater resistance to the high salt environment.

Scientists already knew that salt has a stimulating effect on some types of bacteria and the Limerick team confirmed this finding with their work, which was independently funded by the Irish Department of Agriculture and Food. Their research implies that some high salt foods may be more at risk of bacterial spoilage than they need to be.

"At the moment our results are helping processors reduce salt levels in frozen ready to eat meals. Generally these meals carry a large percentage of the recommended daily allowance of salt. This type of food is becoming increasingly popular and is in high demand due to its convenience and time restrictions placed on consumers due to modern day lifestyles", says Edel Durack.

"Hopefully our study will lead to the development of a new range of low salt foods that will help people to reduce salt levels in their diet, reducing their risk of cardiovascular diseases linked to excess sodium, without compromising product safety".

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Notes to News Editors:

For further information contact Dr. Martin Wilkinson, Life Science, University of Limerick, tel: +353 61 213440, fax: +353 61 331490, email: Martin.Wilkinson@ul.ie

Ms Durack is presenting the poster ‘Monitoring of the effects of varying salt levels on growth of food spoilage bacteria using plate counting and Flow Cytometry’ at 1030 on Tuesday 04 September 2007 in the Plenary session of the 161st Meeting of the Society for General Microbiology at the University of Edinburgh, 03 - 06 September 2007.

For press enquiries during the meeting please contact the SGM desk on +44 (0) 131 650 4581 or mobile telephone +44 (0) 7824 88 30 10

For enquiries prior to the meeting contact Lucy Goodchild at the SGM office, tel: +44 (0) 118 988 1843, fax: +44 (0) 118 988 5656, email: l.goodchild@sgm.ac.uk

Full programme details of this meeting can be found on the Society's website at: http://www.sgm.ac.uk/meetings/MTGPAGES/Edinburgh07.cfm. Hard copies are available on request from the SGM.

The Society for General Microbiology is the largest microbiology society in Europe, and has over 5,500 members worldwide. The Society provides a common meeting ground for scientists working in research and in fields with applications in microbiology including medicine, veterinary medicine, pharmaceuticals, industry, agriculture, food, the environment and education.

The SGM represents the science and profession of microbiology to government, the media and the general public; supporting microbiology education at all levels; and encouraging careers in microbiology.