

Cutting salt levels in mayonnaise

Scientific evidence links excess salt levels with increasing blood pressure, which is a major risk factor in Coronary Heart Disease and stroke. The Food Standards Agency (FSA) has identified processed foods as the main contributors of salt in the diet.

Currently, adults are consuming on average 9g of salt per day and the FSA recommend a reduction to 6g of salt per day by 2010. Hidden salt levels in sauces and dressings were one group of processed foods identified by the FSA.

The aim of this study was to develop an organoleptically acceptable mayonnaise with less salt and to assess the organoleptic properties of mayonnaise containing salt replacement ingredients.

This study was conducted as two separate trials

Trial 1: Decreasing the level of salt in mayonnaise

Currently, salt levels range from 1-1.5% in retail brands of mayonnaise. Four mayonnaise recipes were formulated with the following salt levels 0.7%, 0.8%, 0.9% and 1% and the organoleptic properties of each mayonnaise was assessed using formal taste panels.

Table 1. Assessment of organoleptic acceptability of mayonnaise samples with varying levels of salt.

Sample	Aroma	Texture	Flavour	Overall acceptability
1.0% salt	5.25	5.08	5.58	5.50
0.9% salt	5.50	5.33	5.33	5.42
0.8% salt	4.67	5.00	5.00	5.00
0.7% salt	5.08	5.17	5.33	5.50

Scores are reflected using the hedonic scaling range show scores of 5 and above are acceptable to consumers

The results (Table 1) show similar scores for each organoleptic attribute between samples e.g. the sample containing 0.7% salt and the sample containing 1% salt received the same score for overall acceptability. This indicates that a 30% reduction in the salt level does not have an adverse effect on consumer taste for mayonnaise.

Trial 2: Assessing mayonnaise containing salt replacement ingredients

Both the mayonnaise samples containing 0.7% and 1.0% table salt were deemed acceptable to consumers and were used in the second trial as a comparison to mayonnaise samples containing salt replacement ingredients. The mayonnaise samples containing (0.7% & 1%) table salt received the highest scores for all attributes including overall acceptability when compared with samples containing salt replacement ingredients.

Table 2. Organoleptic acceptability of mayonnaise samples containing salt replacement ingredients

Sample	Aroma	Texture	Flavour	Overall acceptability
1% Table salt	5.93	6.73	6.40	6.33
0.7% Table salt	5.80	5.87	6.07	6.00
0.7% LoSalt	4.73	4.67	3.93	4.07
0.7% Icelandic salt	4.33	4.80	4.60	4.27

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Definitions

Table salt contains 100% sodium chloride (NaCl).

LoSalt contains a blend of sodium chloride (NaCl) and potassium chloride (KCl) as 66% KCl/33% NaCl.

Icelandic salt contains a blend of sodium (NaCl), potassium (KCl) and magnesium chloride (MgCl) as 40% NaCl/40% KCl/ 17% MgCl.

Conclusion

The development of a mayonnaise product with 0.7% salt was found to be acceptable to consumers. This product contained 30% less salt than a typical mayonnaise and hence could be labelled as a “reduced salt” product.

Further assistance in reducing the level of salt in your food products can be obtained by contacting Dr Roisin Lagan at CAFRE, Loughry Campus on 028 867 68153 or by emailing roisin.lagan@dardni.gov.uk

College of Agriculture, Food and Rural Enterprise (CAFRE) is an integral part of the Northern Ireland Department of Agriculture & Rural Development. Loughry is the College’s centre of excellence for food technology and has lead responsibility for people development and technology transfer programmes in the food processing and supply industry. It provides key expertise in food manufacture, safety, packaging, innovation and waste minimisation.

If you have any comments or suggestions on future content, or need help with solving a problem in your business, please do not hesitate to contact Dennis Legge by emailing dennis.legge@dardni.gov.uk

This study is part of the Salt Reduction in Foods project currently being undertaken by CAFRE.

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