



**Guidance on  
Salt Reduction in Meat Products  
for Smaller Businesses**

# Contents

Summary and Introduction	3
Uses of Salt in Food	5
What you Should do	6
Table 1 Alternative ingredients to salt for specific functions	7
Phasing of Reductions and Labelling	8
Appendix 1 FSA Salt Reduction Targets for Meat Products	9
Appendix 2 Action Plan for the reduction or removal of salt	10
Appendix 3 Labelling Requirements	12
Useful Contacts	13

# Guidance on Salt<sup>1</sup> Reduction in Meat Products for Smaller Businesses

## SUMMARY

The BMPA has published this guidance document to inform and assist all small and medium sized businesses in understanding the Government's salt reduction targets and the points that need to be considered when implementing changes to their products to reduce levels of salt present. This document provides the reader with the background for the FSA's programme of work in this area and the salt targets for meat products which have been set, in consultation with industry, to be achieved by 2010. General guidance has been provided in the form of an action plan flow diagram to highlight areas to consider when taking steps towards reduction of salt in products. To obtain more information including technical advice, a section with useful contacts has also been provided.

## INTRODUCTION

In May 2003 the Scientific Advisory Committee on Nutrition (SACN) published its report "Salt and Health". For the report, SACN had reviewed the evidence linking high salt intakes to high blood pressure and concluded that the evidence of a link was stronger than it had been when the issue had last been reviewed in 1994. High blood pressure can increase the risk of suffering from heart disease and stroke – those with high blood pressure are three times as likely to suffer from these diseases, and twice as likely to die from them, than someone with normal blood pressure.

SACN also concluded that a reduction in the average salt intake of the population would proportionally lower blood pressure levels and confer significant public health benefits by reducing the risk of cardiovascular disease. SACN recommended that average salt intakes for adults should not exceed 6g per day. SACN also set maximum levels for babies and children under 11 years old who should have less salt than adults:

- 1 to 3 years – 2 g salt a day (0.8g sodium)
- 4 to 6 years – 3g salt a day (1.2g sodium)
- 7 to 10 years – 5g salt a day (2g sodium)
- 11 and over – 6g salt a day (2.5g sodium)

Data suggests that around one-third of adults in England suffer from high blood pressure, a large proportion of which is undiagnosed and therefore untreated.

Following publication of the SACN report, the government set a target to reduce the salt intakes of the UK population to an average of 6g per day by 2010. Since the government adopted this target, details of which are outlined in the Department of Health's Public Health White Paper and the Food Standards Agency's (FSA) Strategic Plan, work has been taken forward in two main areas:

- discussions with the food industry to reduce the salt content of food; and
- an ongoing public awareness campaign to inform consumers of the issues and provide them with guidance on how to reduce their salt intake.

## Salt Reduction in the Diet

As around 75% of the salt that we eat is already present in the foods that we buy, the majority of which comes from processed foods and is in the form of common salt (sodium chloride), the FSA has been working with the food industry to encourage reductions in the levels of salt in these foods. As a result, the FSA now has commitments to salt reduction from 70 organisations across all sectors of the food industry. This work is supported by the FSA's public awareness and education initiatives.

## Salt targets

To provide some guidance to the industry about the type of foods in which reductions are required, and the level of reductions that are needed to help reduce consumers' intakes, voluntary salt reduction targets for 85 categories of processed foods were published by the FSA in March 2006. The categories covered by the targets are wide-ranging and include dietary staples, such as meat products (including bacon and ham), bread, breakfast cereals and cheese, as well as convenience foods, (ready meals, pizza, sandwiches etc) and a wide range of snacks – both savoury products and cakes and pastries. The targets for meat products are included at Appendix 1 and can also be found at: <http://www.food.gov.uk/multimedia/pdfs/salttargetsapril06.pdf>

Maximum target levels have been set for meat products per 100g. An average target has been set for Bacon and Ham products see appendix 1. The Targets introduce an upper limit that all products within the category should achieve and gives a clear benchmark below which levels should be reduced. In the majority of cases the targets have been set for products as sold.

<sup>1</sup> For consistency purposes, the word 'salt' is used in this document as a general term for sodium and salt. On a weight basis, salt comprises 40% sodium and 60% chloride (1g of sodium is equivalent to approximately 2.5g

Whilst work to achieve the targets is voluntary, the FSA hopes that a wide range of food manufacturers and retailers will work towards achieving these. The BMPA has made a clear commitment to work on behalf of its membership with the FSA to deliver these targets wherever possible.

The FSA will be reviewing the salt reduction targets in 2008 to establish what, if any, further reductions are necessary to reach the population average intake target of 6g. This will involve taking account of the reductions achieved to that point, any technical advice that has been obtained, ongoing research and data on current intakes. The review will be carried out in consultation with stakeholders to ensure open discussions on the successes achieved, and the technical barriers to further salt reduction. This guidance will be reviewed and updated as necessary.

---

# Uses of Salt in Food

## FOOD SAFETY

Salt has traditionally been a fundamental "hurdle" in food products to protect against the growth of bacteria which can cause food poisoning and spoilage. Hurdles in food product safety refer to one or more barriers that these micro-organisms need to overcome before they can cause poisoning or spoilage.

### Preservation

Preservation usually refers to processes used to reduce the growth and reproduction of micro-organisms in a food over a period of time. The aim of preservation is to prevent food poisoning and reduce the rate of food spoilage. There are many methods used to preserve food including chilling, freezing, pickling, drying and curing.

Micro-organisms require a number of things in order to grow and multiply, namely food, water and a suitable environment in which to live. By changing these factors (in a food) the ability of a micro-organism to survive and reproduce can be dramatically slowed or stopped.

The addition of salt to a food changes the environment by reducing the amount of available water in the food that the micro-organisms need to grow. This results in the micro-organisms growing at a much slower rate or, in some cases, not growing at all. As a result, food spoilage caused by the micro-organisms takes longer, resulting in the food having a longer shelf life than it would have had without the addition of salt.

In some instances the level of salt added to the food is sufficient to attract water from the bacteria cells themselves. This causes some of the bacteria to dehydrate sufficiently that they die off, preventing the food from spoiling.

## FLAVOUR

Salt is used in many recipes as a flavour in itself or can be used to boost or enhance other flavours. Reducing levels of salt in food by a significant amount at one time may result in an alteration of the flavour profile that could be noticeable to consumers. A number of companies have, however, successfully

reduced the salt used in their products by making a number of small planned adjustments over a longer time frame resulting in no change in perceived taste. This approach can also help to ensure that the reductions made to salt present for other reasons are also made in small, gradual steps. It is also worth noting that consumer palates can adjust quickly to lower salt levels in foods, normally within around 3 to 4 weeks.

## OTHER TECHNOLOGICAL PURPOSE

Salt also has a number of technological uses in foods such as improving the binding of proteins in meat products and strengthening gluten in pastry.

## BALANCING FOOD SAFETY AND HEALTH

The reduction of salt in manufactured food products will contribute significantly towards reducing the amount consumed in the average diet and in reducing the incidence of high blood pressure in the UK. However, the reduction of salt in some manufactured foods, such as bacon, ham and sausages, may reduce the current accepted safe storage time and increase the risk of the food supporting the growth of food poisoning and spoilage organisms. To take account of these issues, manufacturers may need to take appropriate action, such as reducing shelf life or implementing alternative preservative methods e.g. reduction in storage temperature throughout the supply chain, use of preservative gases to improve storage or use of alternative additives. It is also possible, however, that the improvement in manufacturing and distribution standards in modern food manufacturing may mean that safe storage time may not be significantly affected. **Each recipe change must therefore be thoroughly assessed in its own right before the product is made available to the consumer.**

It is important to bear in mind that consumer awareness about salt is increasing and a growing number of consumers are looking at levels of salt in food products when making purchasing decisions. It is likely, therefore, that as consumer expectations change, industry will need to reduce levels of salt in foods and to meet the targets set wherever possible.

## What you should do:

In order to work towards achieving the government targets businesses should assess their products on an individual basis to identify the amount of:

- added salt in the recipe and
- the salt present naturally in an ingredient or added during its manufacture

The following questions can then be asked based on these two parameters – why salt is used in products, at what level salt is present, and what can be done to remove or reduce this? Where the level of salt in a product needs to be reduced in order to meet the FSA's targets it is recommended that businesses gradually remove or reduce the levels of salt and consider replacement with other ingredients where necessary.

A suggested plan of action is included at Appendix 2

### AREAS TO CONSIDER WHERE BUSINESSES WILL IMPLEMENT GRADUAL REMOVAL OR REDUCTION OF SALT FROM RECIPES:

#### Preservative

- A combination of each of the following preservative hurdles can be used in addition to, or instead of, salt to complement each other and achieve a palatable, preserved product:
  - temperature control,
  - approved preservatives
  - preservative gases
  - different packaging systems
- Manufacturers should test the limits of salt levels in their products under controlled conditions – see Action Plan in Appendix 2

#### Flavour

- If small stepped reductions are made in relation to salt added for flavour, the consumer palate will adjust relatively quickly reducing the need to replace the salt flavour with anything else.
- The use of flavour enhancers such as nucleotides is also an option. Use of these products are subject to maximum permitted levels as described in the Miscellaneous Additives Legislation 1995
- In some cases alternative flavours such as spices and herbs can be added to a product to boost the flavour profile.

- It may be possible to use “flake salt”<sup>2</sup> in lesser quantities than “ordinary” salt to achieve the same flavour effect.

#### Other technological purpose

Certain functions of salt can be achieved with alternative ingredients such as:

- Functional Proteins (binding)
- Enzymes (Gluten strengthening)

#### Other important considerations

Manufacturers should be aware that all sources of sodium are included in the FSA's targets. This includes sodium-based additives, preservatives etc as well as salt. Therefore, the possibility of using non-sodium based ingredients should always be considered.

Whilst businesses may not be able to go as far as they would like at various stages of the salt reduction programme, due to issues with consumer acceptability, consumers palates do gradually adapt to a lower salt flavour. It may therefore be possible to make further reductions within a relatively short timescale of the initial reduction. Businesses are therefore advised to review the level of reduction that is possible on a regular basis.

Any change to a recipe may have an effect on product labelling. The position of salt in the ingredient declaration may well change and any replacement ingredients will need to be included. If salt replacers containing potassium chloride are used, a statement should also be made to indicate that the product may not be suitable for those on a low potassium diet.

#### Alternatives to Salt:

It should be noted that the use of salt replacers, such as potassium chloride, is not recommended by the FSA as a substitute to reducing levels of salt in food. The use of these products will maintain a higher salt flavour within a food, instead of this being gradually reduced to allow consumer palates to adapt to a lower salt flavour. In addition, potassium chloride is not suitable for those with kidney problems. There are also limits to the amount of potassium chloride that can be used, as excess can give a metallic and bitter taste to the food in which it has been used.

<sup>2</sup> Research has shown that using a different physical form of salt, i.e. flake can give a more intense flavour, even though a reduced quantity is being used. A salt supplier should be able to provide more information.

**TABLE I : ALTERNATIVE INGREDIENTS TO SALT FOR SPECIFIC FUNCTIONS.**

Function	Alternative	Notes
Preservative	Chilling to a lower temperature.	Reducing storage temperatures by two or three degrees where possible may extend the life of the product.
Preservative	Preservative gases	Preservative gases are usually combinations of Nitrogen and Carbon Dioxide. The mix replaces the air and reduces the ability of some bacteria to grow.
Preservative	Approved Additives	Additives used must be approved for use in the type of product manufactured and used only to the levels specified in the legislation. The Miscellaneous Additives Legislation can be found at <a href="http://www.opsi.gov.uk/si/si1995/Uksi_19953187_en_2.htm">http://www.opsi.gov.uk/si/si1995/Uksi_19953187_en_2.htm</a> . <b>NOTE: Recent amendments to the EU Miscellaneous Additive Legislation came into force in the UK in July 2007 and has restricted the levels of nitrites and nitrates that can be used in a number of meat products.</b> You can view the EU amending Directive at; <a href="http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_204/l_20420060726en00100022.pdf">http://eur-lex.europa.eu/LexUriServ/site/en/oj/2006/l_204/l_20420060726en00100022.pdf</a>
Preservative (Colour)	Approved additives used for colour preservation.	Erythorbic acid and sodium erythorbate can also be used as antioxidants in cured and preserved meat products although some, eg sodium erythorbate, will contain sodium.
Flavour	Herbs Spices Garlic Chilli Lime Lemon Onion Tomato Black Pepper	
Flavour	Roasting Grilling Smoking	
Colour	Roasting Smoking	
Colour	Paprika Chilli Tomato	
Binding Agent	Functional Proteins	A variety of functional proteins are available on the market. Use of functional proteins is likely to result in a change of ingredient declaration.
Texture Enhancers	Gluten Strengthening Enzymes	There are a number of enzymes on the market that will strengthen gluten. Label changes may be required.

## PHASING OF REDUCTIONS

A wide range of food manufacturers and retailers have had programmes to reduce levels of salt in place for a few years now, without experiencing any negative commercial impact on their businesses. The points below give some idea of the reductions that have been achieved over the last few years (it is appreciated that smaller businesses may not be able to reduce levels of salt as quickly or as far as some of the larger companies given below):

- Members of the Association of Cereal Food Manufacturers have achieved a 38% reduction in salt (measured from sodium) from 1998–2006 – including a 5% reduction achieved in 2006.
- Project Neptune, an initiative organised by the FDF to reduce levels of salt in soups and pasta sauces with 8 key members, achieved, on average, an overall reduction of nearly 30% in cooking and pasta sauces, and an overall reduction of around one-quarter in soups.
- The levels of salt in pre-packed sliced bread has been reduced by around 30% since the 1980s.
- In 2005, Walkers removed 25% of the salt in its standard range of Walkers Crisps and Walkers Lights. Reductions of between 25% and 55% will have been achieved in snacks such as Quavers, Wotsits, Monster Munch and French Fries by mid April 2007.
- Half of Tesco own brand products (50%) now meet the salt targets.
- Marks and Spencer are working to achieve targets in key product categories as maxima rather than averages and before 2010 where possible
- Waitrose, Asda and Co-op are aiming to meet the FSA salt targets before 2010.
- Boots sandwiches now meet the FSA salt targets.
- Over the last three to four years, Heinz has cut the level of added salt in its baked beans, pasta shapes and Soups by around one-third and in children's pasta ranges by 59%.
- 3663 (a supplier of foods to catering businesses) has reduced the salt in its own brand products by over a quarter (26%), and remains committed to reducing levels by 50% overall.
- KFC no longer pre-salts its fries; and McDonalds has reduced the amount of salt in its products by between 14% and 75% and is continuing to make further reductions

## LABELLING

Once a business has decided on the steps and timescales of a phased reduction in salt, the matter of labelling needs to be considered. Where products are pre-packed they will need to be labelled in accordance with a number of key legal requirements. Key areas of labelling such as ingredients declaration and nutritional information which may need to be addressed are identified in Appendix 3. Compliance with these requirements are monitored and overseen by Trading Standards officers/departments.

Where the product is used as an ingredient by another manufacturer, any change that affects the labelling of the ingredient sold in its own right could also affect the labelling of the product in which it is an ingredient. Such changes must be notified to the manufacturer.

### When making claims on product:

Products with lower salt content can be positively marketed in line with UK and EU legislation on nutritional claims and advertising.

If a business wishes to make a claim relating to the low salt content of a product, the criteria in Table II below must be followed and statements must not include direct references to prevention of disease, disease cures or any other medicinal or therapeutic inference.

**TABLE II: LIST OF SALT CLAIMS AND THEIR CORRESPONDING CRITERIA ACCORDING TO EUROPEAN REGULATION 1924/2005 ON NUTRITION AND HEALTH CLAIMS MADE ON FOOD.**

Claim	Criteria to be adopted.
Low Sodium or Salt	0.12g Sodium (or equivalent salt) per 100g of finished product.
Very Low Sodium or Salt	0.04g Sodium (or equivalent salt) per 100g of finished product.
Sodium or Salt Free	0.005g Sodium (or equivalent salt) per 100g of finished product.
Reduced Salt	The salt content needs to be at least 25% less compared to a similar product.

Where salt has been reduced, it will be very important to ensure that any nutrition information on the label is adjusted accordingly.

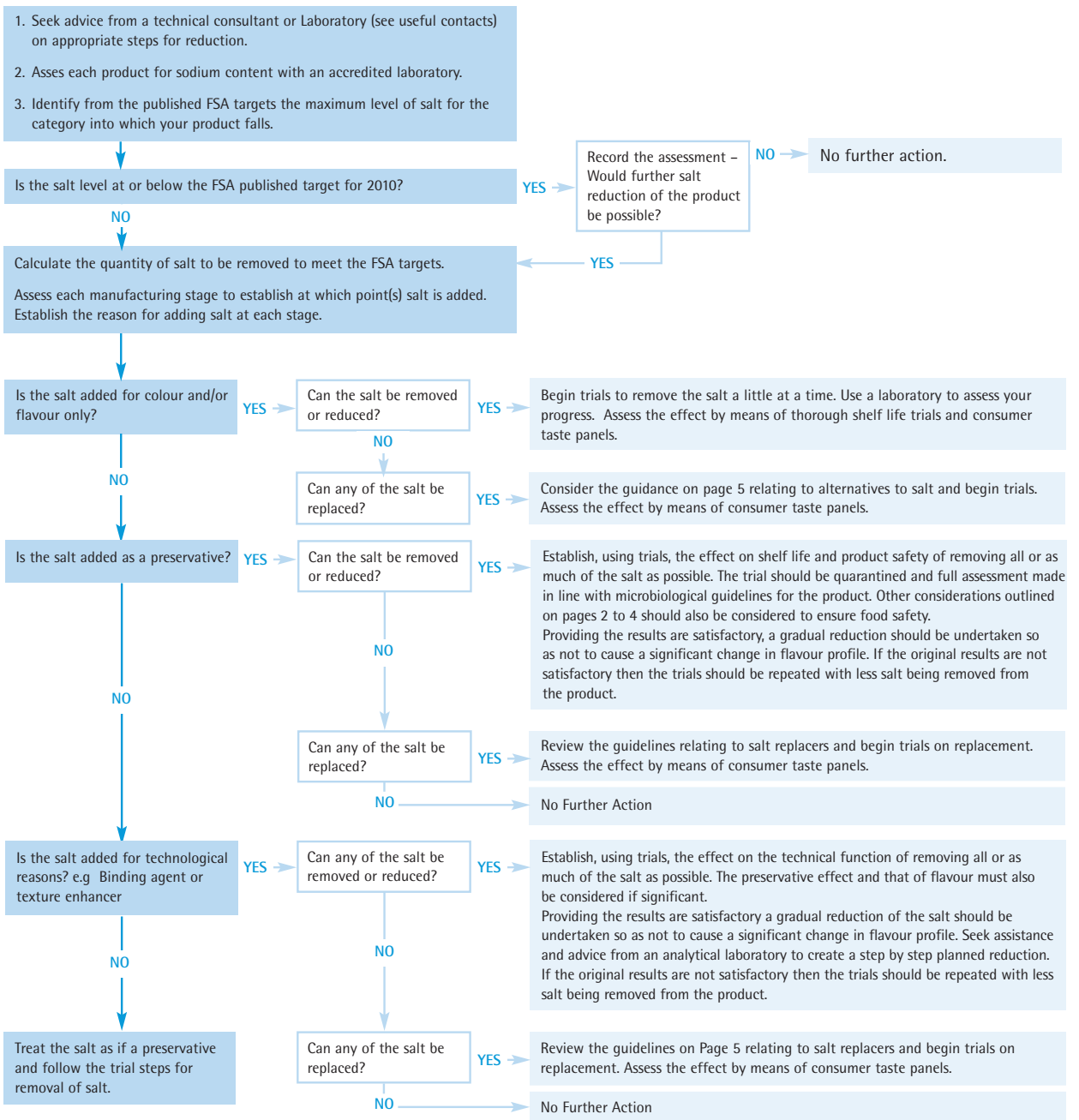
## Appendix 1

# FSA Salt Reduction Targets for Meat Products

Main Product Category	Sub-Categories	Final Targets to be achieved by 2010 (g salt or sodium per 100g)	Comments on Final Target	
Meat Products	<b>Bacon</b> Includes all types of [injection cured] bacon, e.g. sliced back, streaky smoked and unsmoked bacon, bacon joints etc. Excludes all dry and immersion cured bacon	3.5g of salt or 1.4g sodium (average)	Products included in the category account for 85-90% of bacon market. Target is based on process of injection cured bacon being managed with a maximum ingoing amount of sodium to achieve an average of 1.4g in the final product. Process of manufacturing dry and immersion cured bacon makes it more difficult to control salt levels, hence exclusion.	
	<b>Ham/other cured Meats</b> Includes hams, cured pork loin and shoulder etc. Excludes 'Protected Designation of Origin' and traditional speciality guaranteed products, e.g. Parma ham. Also excludes speciality products produced using traditional methods such as immersion and dry cured processes.	2.5g salt or 1g sodium (average)	Target is based on process of injection cured ham being managed with a maximum ingoing amount of sodium to achieve an average of 1.0g in the final product.	
	<b>Sausages</b> Includes all fresh, chilled and frozen meat sausages, e.g. pork, beef, chicken, turkey, etc	1.4g salt or 550mg sodium (maximum)		
	<b>Cooked sausages and sausage meat</b> Includes all cooked sausages and sausage meat products e.g. stuffing, turkey roll with stuffing etc. Excludes Scotch eggs (see below)	1.8g salt or 550mg sodium (maximum)		
	<b>MEAT PIES</b> <b>Delicatessen, pork pies and sausage rolls</b>	1.5g salt or 600mg sodium (maximum)		
	<b>Cornish Et meat based pasties</b>	1.3g salt or 500mg sodium (maximum)		
	<b>Other meat-based pastry products</b> including pies and slices	1.1g salt or 450mg sodium (maximum)		
	<b>Cooked uncured meat</b> Includes all roast meat, sliced meat etc. Excludes ham (see above).	1.5g salt or 600mg sodium (maximum)		
	<b>Burgers, grillsteaks etc</b> Standard fresh and frozen burgers and grillsteak products. Includes beefburgers, hamburgers, pork/bacon burgers, chicken burgers, turkey burgers and all kebabs. Excludes canned burgers.	1.0g salt or 400 mg sodium (maximum)		
	<b>Speciality and topped burgers and grillsteaks</b> Includes all flavoured products.	1.3g salt or 500mg sodium (maximum)		
	<b>Poultry (coated)</b> Includes processed poultry products, such as nuggets, kiefs, etc.	1.0g salt or 400mg sodium (maximum)		
	<b>Canned frankfurters, hotdogs, and burgers</b> Includes canned frankfurters, canned hotdogs and canned burgers only.	1.4g salt or 550mg sodium (maximum)		
	Other processed egg products	<b>Scotch eggs</b>	1.0g or 400mg sodium (maximum)	

## Appendix 2

# Action Plan for the reduction or removal of salt



#### SUMMARY OF ACTION POINTS TO CONSIDER:

A plan for implementing the finalised recipe changes should be drawn up. This plan should consider the following points or actions necessary:

- The FSA goal for achievement of the targets is 2010
- Establish the source of the salt in the product and its function.
- Discuss your requirements with ingredients suppliers to determine whether any reductions can be made in the materials sourced from them.
- When reducing salt levels, set sensory criteria to evaluate product acceptability. These criteria could include flavour, texture or colour. Consumer taste panels could be used to validate any changes made.
- Ensure that any finalised reduction or replacement is supported by thorough shelf life testing and microbiological analysis of the product.
- Record the date of changes, levels of sodium and salt at each reduction and the results of the monitoring against the set criteria.
- Ensure any labelling is adjusted as the recipe is changed e.g. figures for salt/sodium in the nutrition panel; place of salt in the ingredients list, or information regarding the presence salt replacers.
- Throughout the course of the programme, record when each stage of reduction is complete and the new product with the lower salt level is on the market. Collate and feedback any information from customers with regard to the product at each stage.

---

## Appendix 3

# Labelling Requirements

Pre-packed products are required to be labelled with a number of key legal requirements. A recipe change can affect a number of these requirements and these are indicated below:

### Name of the food

- The effect of any change needs to be considered. A simple reduction of salt may not require any amendments to the legal name of the food however the addition of certain other ingredients may need to be taken into account.
- Such ingredients could include protein from different species origin or alternative flavouring materials.
- The addition of alternative products could in some cases lead to increased water retention that may be declarable in the name of the food.
- The addition of processing methods used to impart flavour such as roasting, smoking or grilling.

### Ingredient list

- A new ingredient list must be generated from any alteration to a recipe in order to ensure that the information on pack is correct.
- Where a recipe has changed sufficiently to alter the ingredient declaration, an amendment to the packaging should be implemented.
- New ingredients must be fully risk assessed for safety and legality (allergic reactions and permitted use are two examples of areas to be considered).

### Appropriate Quantitative Ingredient Declaration (QUID)

- This may not alter although must be checked as part of the review of the recipe and ingredients list.

### Durability Information (Use By or Best Before)

- Durability information may change following shelf life trials. However if the actual durability date is printed onto the pack at the factory, it will be the factory equipment that requires adjustment to reflect this and not the label itself.

### Allergy Information (where applicable)

- Each recipe must be individually assessed for allergen and intolerance information.
- New ingredients must be thoroughly assessed to ensure correct information is given to the consumer on the pack in relation to these areas.
- All allergens in a recipe or its ingredients must be identified in the ingredients list in accordance with FSA guidance.

### Any particular storage conditions or conditions of use

- If the alteration to the recipe has affected the storage conditions or conditions of use, this may also be an area to be amended.

Where the product is used as an ingredient by another manufacturer, any change that affects the labelling of the ingredient sold in its own right could also affect the labelling of the product in which it is an ingredient. Such changes must be notified to the manufacturer.

Further information on labelling and claims on a product are given on page 8.

## Useful Contacts

### **BMPA**

[www.bmpa.uk.com](http://www.bmpa.uk.com)

### **FSA**

General FSA Website

<http://www.foodstandards.gov.uk>

Link to information on salt targets

<http://www.food.gov.uk/healthiereating/salt/devsalttargets>

FSA's Salt Website

<http://www.salt.gov.uk>

SACN report on salt and health

<http://www.food.gov.uk/multimedia/pdfs/saltandhealth0503.pdf>

Advisory Committee on Microbiological Safety of Foods (ACMSF)

<http://www.food.gov.uk/science/ouradvisors/microbiogsafety/>

### **ADVISORY ORGANISATIONS AND LABORATORIES:**

The organisations listed below supply confidential consultancy and laboratory services to the food industry including legal advice, labelling advice, research, technical support and training. The organisations are given in alphabetical order and no one organisation is recommended over another.

#### **Bodycote Law Labs**

[www.lawlabs.com](http://www.lawlabs.com)

#### **Campden and Chorleywood Food Research Association (CCFRA)**

[www.campden.co.uk](http://www.campden.co.uk)

#### **Leatherhead Food International**

[www.leatherheadfood.com](http://www.leatherheadfood.com)

#### **RHM Technology**

[www.rhmtechnology.co.uk](http://www.rhmtechnology.co.uk)

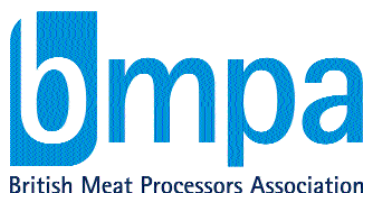
#### **RSSL**

[www.rssl.com](http://www.rssl.com)

#### **United Kingdom Accreditation Service (UKAS)**

Provides the contact information for accredited microbiological and chemical testing laboratories performing accredited microbiological and chemical techniques around the UK.

[www.ukas.com](http://www.ukas.com)



12 Cock Lane, London EC1A 9BU  
Tel: 020 7329 0776 Fax: 020 7329 0653  
Email: [info@bma.uk.com](mailto:info@bma.uk.com)  
Website: [www.bma.uk.com](http://www.bma.uk.com)