The Food & Drink Innovation Network

Reducing Salt in Meat and Meat Products

A Challenge of Conflicting Requirements

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29 January 2004

Contribution to sodium in the diet per person per day

- 0.54g from meat and meat products
- 0.01g from beef
- 0.01g from pork
- 0.03g from poultry
- ? from lamb
- 0.2g from bacon and ham
- 0.09g from sausages
- leaves 0.19g from the rest

Looking at Labels

- 1g salt is equivalent to 0.4g sodium
- 1g salt contains 391mg sodium
- 1g sodium is equivalent to 2.55g salt

Per 100g food:

- 0.5g sodium or more is a lot of sodium
- 0.1g sodium or less is a little sodium
- between 0.1g and 0.5g is a moderate amount

The role of salt in meat products

Physical:	Water binding
	Solubilising proteins
	Stabilising protein matrices
	Binding
Sensory:	Taste
	Product specific
	Texture
	Interactions
Preservative:	Essential for cured products
	Replacement of natural flora
	Conversion of nitrate to nitrite

Evidence of declining sodium

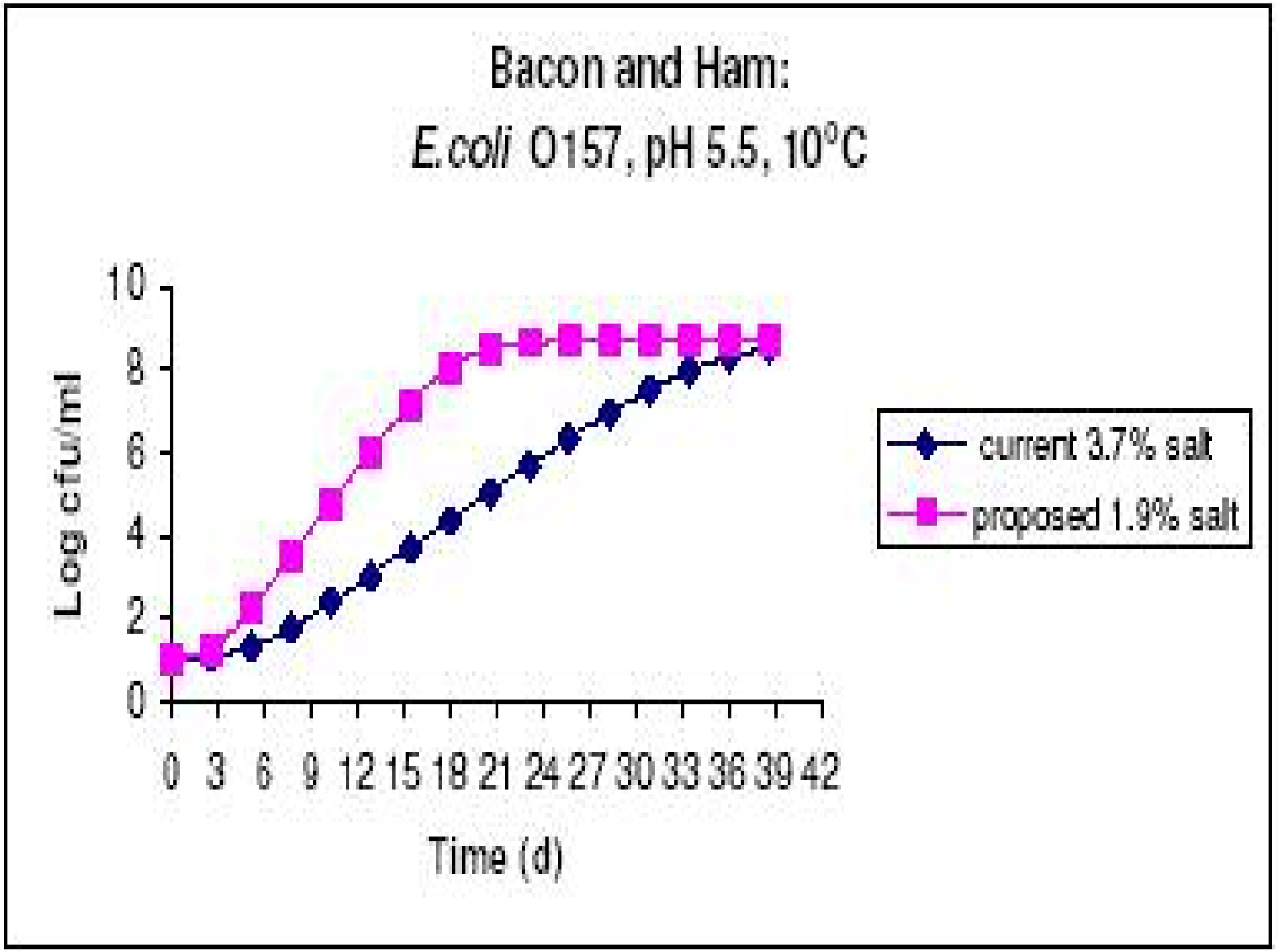
Food Item	Sample	1978	2002
Beefburgers, frozen raw Beefburgers, chilled/frozen raw	36 samples, 6 brands 8 samples, 3 brands	600	290
Cornish Pastie Cornish Pastie	18 pasties 10 samples, 5 brands	590	400
Pork Pie, individual Pork pie, individual	18 pies 8 samples of 8cm pies	720	650
Steak and kidney pie Steak and kidney / Beef pie, individual	 16 samples	680	460
Bolognese sauce Bolognese sauce, (with meat)		440	306

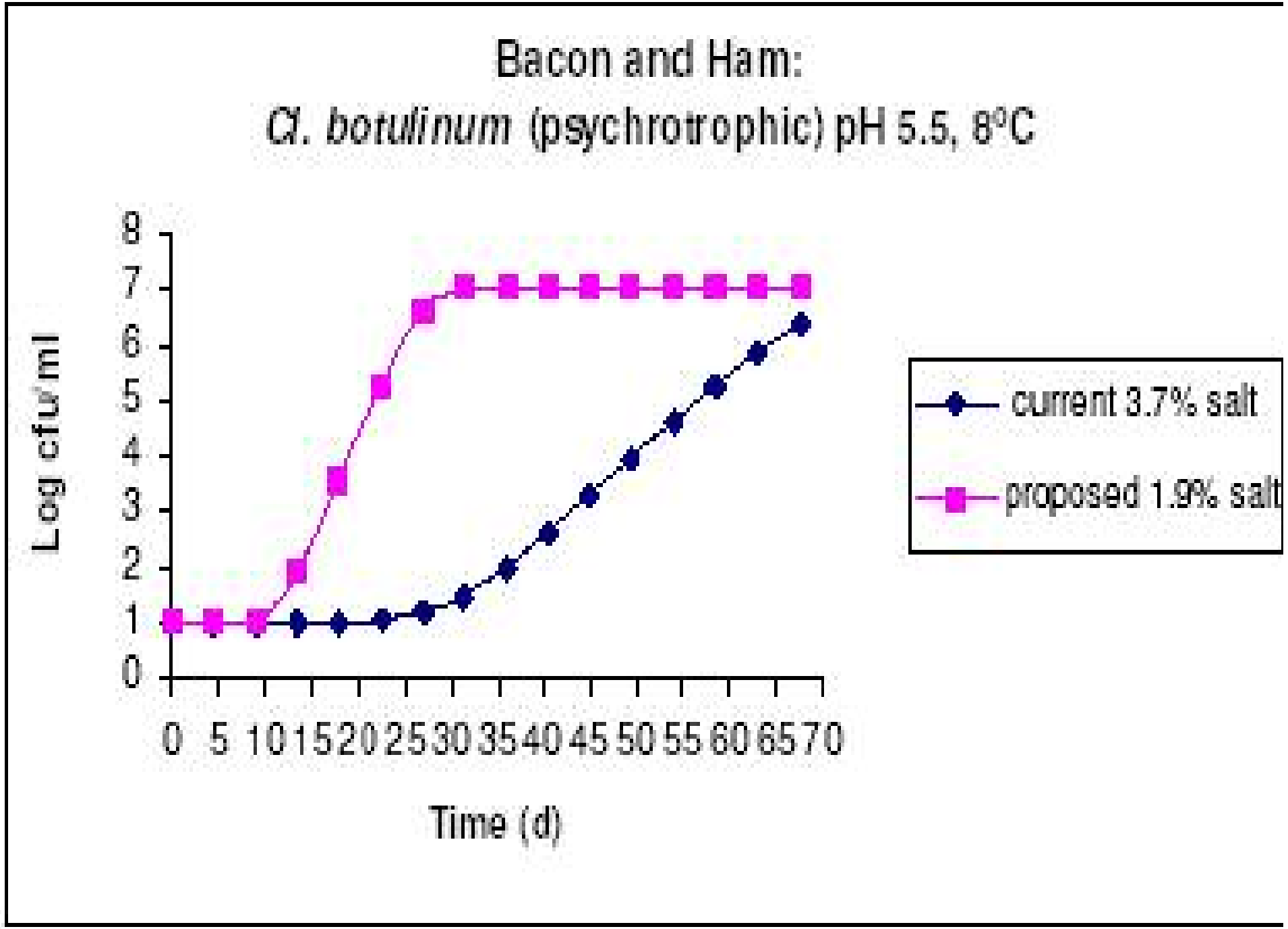
Multiple retailer shop survey

	Sodium mg/100g		
	Mean	Range	FSA Average
Bacon & Ham	870	500-1100	1491
Sausages	770	300-1300	962
Meat Pies	460	200-1400	465
Burgers	500	200-1200	503
Beef Mince	70	0-100	224?

FSA's Modelling Salt Reduction

	Current Average sodium value (mg/100g)	% sodium contribution to the diet	Target average % reduction	Target average (sodium mg/100g)
Bacon & Ham	1491	8.0	50	750
Carcase meat, poultry products & dishes	224	6.8	33	150
Burgers & Kebabs	503	1.6	40	300
Sausages	962	3.4	43	550
Meat Pies	465	2.4	35	300
Ready Meals meat based	400	2.2	38	250
Meat Centre meat based	485	0.9	28	350
Takeaway meat based	376	1.2	33	250


Bacon and Ham:
E.coli O157, pH 5.5, 10°C
Log cfu/ml
0
2
4
6
8
10
0 3 6 9 12 15 18 21 24 27 30 33 36 39 42
Time (d)
current 3.7% salt
proposed 1.9% salt


Bacon and Ham:
Cl. botulinum (psychrotrophic) pH 5.5, 8°C
Log cfu/ml
0
1
2
3
4
5
6
7
8
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70
Time (d)
current 3.7% salt
proposed 1.9% salt

FSA Mini Survey on Sausages

- Average salt down by 11% since 1991
- Standards sausage up from 2.2g - 2.4g per portion
- High quality sausage up from 15g - 20g per portion
- Average fat down by 25%
- 56% decrease in low/reduced fat sausages (11.1g - 4.9g)

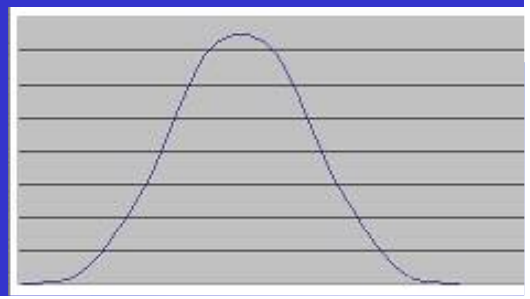
Sodium Data Gathering

Method of Approach

Data Gathering

Create Logical Groups

Plot Distribution Curve

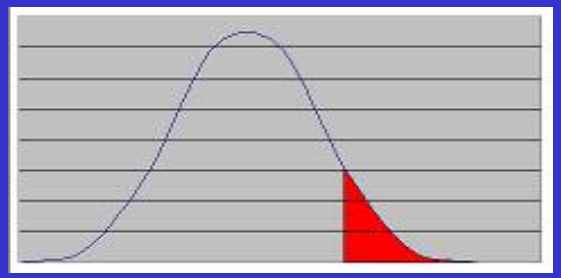


Comparison of sodium values with other surveys

	BMPA/ UKAFFP	MLC	FSA
Pies	375	460	465
Bacon	1298	{870	{1491
Ham	978	{	{
Sausages	698	770	962
Burgers	457	500	503
Pizza	508	---	600
Sausage Rolls	564	700	---
Pork Pies	592	650	---

Method of Approach

Plot areas at top end of curve



Upper sodium limit

Area at 20% and 30%

Review and agree sodium limit for category

partners in public sector catering®
Talking Food and Nutrition

Sodium

To reduce the salt used in cooking:
Experimenting with recipes to see how much salt reduction can be achieved without compromising on taste.

- use salt sparingly in cooking
- reduce sauces before seasoning
- use frozen, dried and /or fresh herbs
- use spices, lemon or lime juice to flavour food in place of salt
- use curry powder/paste, tomato paste or mustard powder for seasoning
- use salt-reduced stocks and soup mixes
- avoid the use of stock pastes, granules, packet soups and sauces that contain a lot of salt, where possible

How much do we need?
The amount of salt we add to food reflects our own personal taste, but many people are trying to restrict their salt intake

Unlike other minerals recommendations exist to limit our sodium intake.

The reference nutrient intake (RNI) for sodium is 1600mg.

In the UK daily consumption is about 4000mg per day.

Conclusions

- A whole diet approach is important
- Some FSA target reductions are unrealistic
- Categories used by FSA/DoH are too broad
- Work with industry to an agreed strategy
- Product quality and safety issues are crucial to consumer confidence
- What impact will average salt reductions have on discretionary use?
- Support further research

You can lead a horse to water !

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