



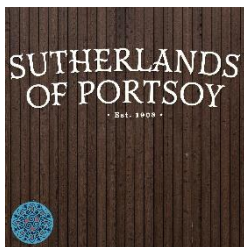
SUTHERLANDS OF PORTSOY

“We are seeing potentially significant benefits from this reformulation process. If this challenge changes the taste, it could provide us with an additional line of products.”

“Engaging the workforce in a reformulation challenge equally has a positive impact, in that the business is seen to be thinking of the next generation.”

John Farley

Director, Sutherlands of Portsoy



Using healthier salt types in smoked salmon

Who we are

Sutherlands of Portsoy is a traditional smokehouse dating back to 1908, based in the idyllic village of Portsoy on the northeast coast of Scotland. We have an established core range of the finest smoked Scottish fish which we sell locally, online, to the hospitality sector and internationally, and are working with the Refomul8 project to change the salt usage in our smoked salmon products.

Our goal

As a business, we are always looking out for ways to improve our processes. It occurred to us that if we could reduce the sodium content of our cold smoked salmon products, whilst maintaining both the microbiology and taste,

we could offer a healthier option. This could give us a competitive edge, and also be shared within the sector for the betterment of all.

Our reformulation project

A grant of £5,000 from FDF Scotland’s Reformul8 Challenge Fund enabled us to look at the whole salt aspect of our process, exploring different salt types available from salt suppliers Peacock and Blackthorn. We wanted to establish whether the use of Blackthorn seasalt, which is naturally lower in sodium than table salt and many seasalts, would transfer less sodium into our product, while still meeting the legal safety requirements for salt content and still scoring positively on taste and texture tests.





To trial this, we are running extensive microbiology, sensory and nutritional tests on salmon cold-smoked using 3 different types of salt:

- Our existing coarse salt
- Blackthorn seasalt flakes
- A new reduced sodium salt blend developed by Peacock Salt (also with funding support from Reformulation for Health). The blend of sodium chloride, potassium and magnesium will help producers like ourselves to reduce sodium content.

All the samples tested involve the same size of fish fillets, the same amount of salt, and the same soaking, draining and smoking times and all tests are being repeated several times to check the consistency of results.

Tests and results

The **microbiology tests** we ran looked at aqueous salt content and moisture content. We had to ensure that all the salmon smoked met the legal requirement of having aqueous salt content above 3.5%. Each sample was tested at Day 5, Day 12 and Day 21 (beginning, middle and end of shelf life) to ensure the microbiological safety.

The results provided an excellent starting point, in that all samples easily complied with the minimum requirements. Aqueous salt content ranged between 6.47% and 5.49%, with the Blackthorn salmon having the highest figure, which came as a surprise.

We then ran **sensory tests**, asking people about the appearance, colour, aroma, texture and salty taste of the different salmon types. Overall, across our tasting panels:

- All samples were highly rated, scoring over 80 out of a maximum 100.
- Blackthorn was viewed as significantly lighter in taste and less salty than the others, while the existing blend had the saltiest taste.
- All samples had broadly similar (and positive) ratings for visual appeal, colour, aroma and texture.
- The blended salt was the preferred sample, with an average score of over 85.

As our director John Farley says, “Taste is a personal preference. But in terms of flavour profile, I think that the less salty a product tastes, the more appealing it is. Using these different salts to change the taste could help us stand out in a very crowded marketplace.”





What's next?

The next stage of our reformulation journey is the nutritional test results, showing the outcomes in terms of sodium content. Obviously, this is a key element of the project and will determine what we decide to do – and also whether this learning gets rolled out more widely.

We will also run tests using a 60/30/10 blend of sodium chloride, potassium and magnesium, and do trials with all 4 salt types on our hot smoked salmon.

But even before the nutritional results, we've made worthwhile discoveries:

- All the new salt types tested would meet food safety requirements for salt content.
- We could roll out a new line using the Blackthorn salt. The sensory tests show it meets safety requirements and appeals to people who like a lighter, less salty smoked salmon.

- If the nutritional tests indicate that using a blended salt mix will reduce the sodium content in our smoked salmon, we can look at using the blend in our 'standard' range. We have got the microbiological and sensory evidence to support that.

A journey worth taking

As we wait to complete this reformulation project, we're already very pleased to have started it, and would recommend it to others. While you may have tried and tested processes within your business, there may well be ways of improving them to make the products healthier. The worst that can happen from testing the different options is that you rule out some potential changes; the upside is that you may be able to make significant positive differences.