

# Food Product Reformulation in the Welsh Food and Drink Manufacturing and Processing Industry

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## Introduction

In Wales, consumption data indicate consumer reliance on convenience food<sup>1</sup>, under consumption of fruit and vegetables<sup>2</sup> intakes of fat<sup>3</sup>, salt<sup>4</sup> and sugar<sup>5</sup> exceeding dietary recommendations and consumption of high fat, salt and sugar food and drink products<sup>1</sup>.

Consequently, in Wales 58% of adults<sup>2</sup> and 25% of children are overweight<sup>6</sup>. Food-related ill health, particularly among children is reportedly greater in Wales than the rest of the UK<sup>7,8</sup>. The cost of food-related ill-health has a significant impact on the National Health Service in Wales<sup>9</sup>.

It may be suggested that Welsh food and drink manufacturing and processing businesses (FDMPBs) have a role to play by providing Welsh consumers with more nutritionally beneficial choices. The Welsh Government 'Food for Wales, Food from Wales 2010-2020 strategy'<sup>10</sup> aims to nurture a food sector which can provide high standard food that is sustainable, safe, affordable and healthy.

Reformulation can produce food of greater nutritional benefit to consumers. UK voluntary reformulation has reduced levels of salt<sup>11</sup>, the Childhood obesity action plan, aims for FDMPB reformulation to lower levels of sugar<sup>12</sup>.

However, reformulation is not a straightforward process, many factors may limit the feasibility of reformulation. Currently, little is known about the reformulation experiences of FDMPBs in Wales.

## Research aim

Explore the reformulation activity of FDMPBs in Wales to identify associated drivers, barriers, benefits and required support mechanisms to facilitate effective reformulation activity.

## Methods

As part of a large Welsh Government funded research project<sup>13</sup>, FDMPBs in Wales participated in the two phases of research:

- In-depth interviews regarding reformulation experiences giving insight to the drivers and barriers to conducting food product reformulation (n=7)
- online questionnaires regarding reformulation activity and reduction estimates (n=21).

Ethical approval for the study was obtained from the Cardiff School of Health Sciences Ethics Committee.

## Acknowledgements

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## Results

### Reformulation experiences of Welsh FDMPBs

Reformulation can involve the reduction, removal or replacement of target nutrients such as fat, salt and/or sugar, given the function of these nutrients in food products, reformulation can have an impact on the product in terms of sensory changes, shelf life reduction and on production costs (Figure 1).

Not only can reformulation have an impact on the food product, it can have an effect on the FDMPB and the consumer. These factors may limit the feasibility of reformulation.

The drivers, barriers, benefits of reformulation were explored and potential support mechanisms required to enable FDMPBs to facilitate effective reformulation activity were identified:

### Drivers for reformulation

Consumer demand for 'healthier' food products and pressure by retailers to meet Responsibility Deal pledges were drivers for reformulation among food businesses in Wales:

*"The main driver for reformulation was attributed to retailer pressure."*

(Ready-meal manufacturer supplying catering, retail and food service)

*"The drivers behind reformulation are our customers who are acting on market trends and consumer buying behaviours."*

(Leading producer of retail own label and own brand confectionary, smoothie and fruit juice)

*"Reformulation is typically customer driven. Some reformulation activity is driven from within the business in an attempt to reduce manufacturing costs."*

(Manufacturer of chilled and frozen products for foodservice)

### Barriers to reformulation

Costs associated with reformulation were reported as challenges for FDMPBs, particularly micro and SMEs. Factors including timescale, changes in sensory attributes, shelf-life and consumer perceptions were also discussed as barriers:

*"The high cost of 'salt replacements' made reformulation using this method not feasible."*

(Savoury pastry, breads and cake producer)

*"Where these ingredients are reduced or removed, the sensory attributes of the product could potentially be negatively affected."*

(Savoury pastry, breads and cake producer)

*"One of the challenges of reformulating recipes, especially, is to maintain the flavour of the product, as well as being mindful of food safety parameters such as pH levels which contribute to the product safety."*

(Confectionary producer)

*"The company have chosen not to undertake any further reformulation, as work on the products would be very costly, further reformulation activity is limited by legislative requirements, brand standards and cost."*

(Independent Product Innovation Specialist)

*"Although the business can see the benefits of reformulation, the cost in terms of technical expertise and time associated with development is the biggest barrier to reformulation."*

(Mediterranean vegetarian snack producer)

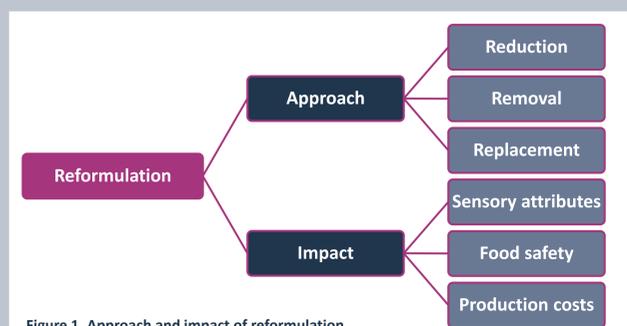


Figure 1. Approach and impact of reformulation

### Benefits of reformulation

The identified benefits of reformulation in some cases included reduced costs through reduced wastage, reduced cooking time, increased yield and increased products stability:

*"During the reformulation, less separation of the fats in emulsion and variation in flavour was observed making the product more aesthetically acceptable especially important when the product is nearing end of life."*

(Independent Product Innovation Specialist)

*"Some cost savings were found during the development of these products where lower priced raw materials were used as the fat replacers yet the overall finished product price was not changed."*

(Independent Product Innovation Specialist)

*"One of the advantages is that in some recipes yields have increased as a result of reformulation"*

(Producer of confectionary, smoothie and fruit juice)

Other benefits included significant commercial opportunities to develop new products to meet changing consumer demand.

### Support to Enable Reformulation

As the process of reformulation was deemed to be time and budget consuming, FDMPBs identified the need for potential support mechanisms to assist and support FDMPBs to facilitate reformulation.

*"Funding opportunities to support the development process and its cost may encourage smaller businesses to invest in reformulation."*

(Artisan charcuterie and cured meat producer)

*"Small businesses are ill equipped and resourced to facilitate effective new product development so require access to an independent, qualified, technical resource to support this activity."*

(Specialist nutritional consultant for manufacturers and caterers)

*"What would make reformulation easier for the business, and in general, a wider availability or knowledge of information on application rates for 'alternative ingredients'."*

(Producer of smoothie and fruit juice)

### Reformulation reductions

Three-quarters (76%) reported reformulation activity to reduce fat (33%), salt (48%) and/or sugar (52%) content of foods (Figure 2).



Figure 2. Fat, salt and sugar reformulation activity (n=21)

Various methods facilitated reformulation. Creating a bespoke seasoning enabled a sausage producer to reduce salt by 25% thus resulting in an annual reduction of 63,513Kg in salt usage.

#### Examples of reformulation activity to reduce fat content included:

- Replacing palm oil/butter with proteins, fruits or nuts
- Replacing shoulder of pork with visually lean cuts
- Reducing amount of oil added to houmous and dips

#### Examples of reformulation activity to reduce salt content included:

- Replacing salt with natural flavours to enhance taste
- Replacing salt with sun dried tomatoes to season ravioli filling
- Reducing quantity of salt added
- Removing salt completely from recipe

#### Examples of reformulation activity to reduce sugar content included:

- Replacing sugar with sweeteners
- Reducing quantity of sugar used in cake production
- Removing sugar added to decorate cakes

## Conclusion

- The study has determined significant reformulation efforts have already been made by Welsh FDMPBs, however support mechanisms are required to enable continued reformulation efforts.
- It must be considered that as the majority of food consumed in Wales is not produced in Wales, future policies directed at Welsh FDMPBs to improve nutritional content of foods will have limited impact. Interventions that influence Welsh consumer's point-of-purchase/consumption decisions will have greatest impact.