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, under consumption of fruit and vegetables1-3 intakes of fat, salt and sugar exceeding dietary recommendations and consumption of high fat, salt and sugar food and drink products.

Consequently, in Wales 58% of adults and 25% of children are overweight4. Food-related ill-health, particularly among children is reportedly greater in Wales than the rest of the UK5. The cost of food-related ill-health has a significant impact on the National Health Service in Wales4.

It may be suggested that Welsh food and drink manufacturing and processing businesses (FDMPBs) have a role to play in providing Welsh consumers with more nutritionally beneficial choices. The Welsh Government ‘Food for Wales, Food from Wales 2010-2020 strategy’6 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 salt7,8, the Childhood obesity action plan, aims for FDMPB reformulation to lower levels of sugar7,8.

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 project9, 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 were undertaken:

• 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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References

13. Evans ELC et al. (2020) Food for the future: a review of food, health and nutrition policy by the ZERO2FIVE Food Industry Centre at Cardiff Metropolitan University on behalf of the Welsh Government.

Results

Reformulation experiences of Welsh FDMPBs

Reformulation can involve the reduction, removal or replacement of targeted nutrients such as fat, salt and/or sugar. Given the function of these nutrients in foods, 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 for FDMPBs to facilitate effective reformulation activity were identified.

Drivers for reformulation

Consumer demand for ‘healthier’ food products and pressure by retailers and consumers. Drivers for reformulation among food businesses in Wales:

• "The main driver for reformulation was attributed to retailer pressure."
• "Where these ingredients are reduced or removed, the sensory attributes of the product could potentially be negatively affected."
• "The company has chosen to not undertake any further reformulation as the manufacturing costs would be very costly.
• "Although the business can see the benefits of reformulation, this cost outweighs any independent, qualitative research evidence to support this activity."

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" used in reformulation using this product."
• "Spicy panettone breads and cake producer."
• "One of the challenges of reformulating products, especially, is to maintain the flavour of the product, as well as being homemade as a food safety parameter such as pH levels which contribute to the product safety."
• "The company had chosen not to undertake any further reformulation as the manufacturing costs would be very costly."

Examples of reformulation activity to reduce fat content included:

• Replacing palm oil/butter with nuts or fruits
• Replacing sugar with sugar-free sugar
• 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:

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

Reformulation reductions

Benefits of reformulation

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

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

More examples of reformulation benefits were given by independent product innovation specialist and one participant of the FDMPBs.

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.

"For SMEs to support the development process and its cost may encourage smaller businesses to invest in reformulation.”

Examples of reformulation support and assistance to be facilitated include:

• “Specialist nutritional consultant for manufacturers and retailers”
• “Reducing the cost of reformulation”

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.