Reducing the levels of fat, salt and sugar in food: a guide for SMEs

As a small or medium size company the need to reformulate may not be at the top of your list of priorities. Even if it is, there are a number of technical and financial barriers to turning the desire to improve the nutritional content of a successful product into reality. Finding accurate and relevant information can be time consuming. This document gives an overview of the need to reformulate and some of the issues involved. It is not possible to give a detailed guide on reformulation as this will depend on numerous factors, but we have given some ideas of where to turn to for technical and financial support.

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The need to reformulate

The European Union has seen a sustained increase in obesity and other non-communicable diseases (NCDs) in its citizens as the result of consuming too much and moving too little. According to the World Health Organization, NCDs now are the major contributor to mortality and morbidity globally. There are also budgetary and economic costs associated with obesity and related conditions. The causes for this social disease are manifold and there is no simple solution.

Various initiatives have been undertaken by governments, NGOs and the food industry at European, national and regional levels. In the UK the main instrument for promoting healthier lifestyle choices is the Responsibility Deal. This initiative allows Government, industry, NGOs and health professionals to debate public health issues honestly and work together to effectively overcome the challenges. Partners sign up to a series of pledges covering food, physical activity, health at work and alcohol. The food pledges relate to:

F1. Out of Home Calorie Labelling
F2. Salt Reduction
F3. Artificial Trans Fat
F4. Calorie Reduction
F5. Salt in Catering
F6. Fruit and Vegetables
F7. Front of Pack Nutrition Labelling
F8. Saturated Fat Reduction
F9. Salt Reduction 2017
F10. Out of Home maximum per serving salt targets

Many major supermarkets have signed Responsibility Deal pledges to improve the healthiness of their own label products. The growing media interest in health and food may also change consumer attitudes towards the levels of fat, salt and sugar in the products that they choose. Finally, even if your products meet the current guideline values, it is likely that these will be revised downwards as more companies reach the target.

There is also a growing body of consumers who are looking for healthier products. According to a survey carried out for the FSA in 2007, almost 1 in 4 adults were trying to reduce or avoid consumption of foods containing sugar and 40% of parents wanted to reduce their children’s consumption of sugar.

Barriers to reformulation

Sensory properties

Salt, fat and sugar are very important to the sensory properties of foods. As well as imparting flavour, they influence the character and intensity of other flavours and often affect the product texture. There is substantial evidence that consumers choose the best tasting foods. This is of course important to food manufacturers, who have to compete for market share. In the long term most consumers will not adopt healthier eating habits unless the foods are enjoyable to eat.
Consumers will adapt to the taste of salt and sugar reduced products, if this is done slowly. Uneven distribution of salt and sugar in the product can in certain cases increase the perceived intensity of the flavour. In particular the effects of particularly fat and sugar on product texture are more complicated to overcome. This is relevant for several food sectors, with bakery products, for example, relying on both fat and sugar for structural and shelf life control. A considerable amount of research into effective reformulation for healthier products is being carried out worldwide, and various solutions are available, though they may not be suitable for all applications.

Product shelf life

Shelf life is the time after production during which a food remains acceptable for consumption. During the shelf-life a food product should:

(i) remain safe
(ii) be certain to retain desired sensory, chemical, physical and microbiological characteristics
(iii) comply with any label declaration of nutritional data

when stored and handled under the recommended conditions.

Salt and sugar decrease the water activity of foods by binding large amounts of water, and this is a barrier to microbial growth. If an ingredient is involved in preserving the food (e.g. salt for cured meats or sugar jams) it is necessary to reassess shelf life of the reformulated product.

Sugar and fat can also increase the shelf life of bakery products by slowing down the rate of staling and increasing the perceived moistness of products such as cake. Hard fats also reduce oxidation in some foods and sugar can mask the flavour of oxidation products.

Changes to the behaviour of food during processing

Fat, salt and sugar also influence a range of properties that are important to food processing. Fat and sugar are bulk ingredients and affect aeration and consistency of cake batter and texture of biscuits. Salt also plays a technological role in some products such as bread and meat products. Fats and oils are also lubricants and, as such, have a role in reducing friction when moving product on surfaces or reducing sugar during heating. Reformulation of these products is possible through an understanding of the functionality of the ingredients.

Cost of reformulation

Reformulation always comes at a cost since time is required to develop a healthier recipe with the same taste and texture as the original product. There are also costs involved in changing the packaging, which will at least need a new ingredients declaration. These costs can be considerably reduced by taking advantage of existing knowledge and there may even be financial support available.
Resources to help with reformulation

A good starting point to find information relating to reformulation is the Salux Clearing House (http://www.salux-project.eu/sez/clearinghouse).

Talking to experts is an efficient way of getting the help with reformulation. Technical expertise in ingredients, processing, safety and labelling are available from technical consultants, universities and food research organisations. The Food and Drink Federation has a list of research organisations that support the UK food industry (http://www.fdf.org.uk).

Funding from the Technology Strategy Board is available to companies in the UK to support innovation and collaborative research (https://www.innovateuk.org/). Innovation vouchers are particularly suited to those who do not have a research partnership.