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New LGC Assure Insights Newsletter: Foods free-from allergens

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Issue 15 - Foods free-from allergens

Welcome to the fifteenth edition of LGC Assure Insights, a free digital newsletter to support your food safety management journey. This edition returns to the topic of allergens but with a particular focus on allergen-free foods, a sector that has seen significant growth in recent years.

LGC Assure Insights covered allergens more broadly in the second edition and if you are interested in reading this or other editions covering special diets, labelling, food fraud, food safety management certification or many more topics, then you can access all of the previous newsletters on the LGC Assure platform.

LGC Assure Insights is different from other news sources as it combines otherwise unpublished food safety management data held across LGC Assure companies with real-time events to provide an unparalleled view of current and emerging issues and trends. And, of course, it is free.

Free-from Foods

Foods that are made to be free-from a specific ingredient (or allergen, in the case of this newsletter), have become increasingly available in the last two decades. Global sales were estimated at **\$121bn** in 2021, with growth predicted to more than double to over \$270bn by 2029. The growth has been stimulated by a demand for 'free-from' foods from consumers with allergies to specific ingredients together with those who have simply chosen to avoid ingredients for lifestyle or dietary reasons. As a further indication of the increased popularity of 'free-from' foods, the Office for National Statistics (ONS) inflation "**Basket of goods and services**" for 2024 now includes gluten-free bread, alongside over 700 other items that are representative of the goods and services on which UK consumers typically spend their money.

'Free-from' foods have no official definition, and in most country's legislation the term is considered an absolute claim meaning the ingredient or allergen must not be present at any level in the food. The UK Food Standards Agency (FSA) states, in its **Allergen Guidance for Food Businesses**, that "a free-from claim is a guarantee that the food is suitable for all with an allergy or intolerance". Certain exceptions do exist such as gluten-free foods where the gluten level must not exceed 20mg per kilogram in total as presented to the consumer (**CODEX, EU**).

The fact that most 'free-from' foods must not contain the allergen at any level requires the adoption of enhanced measures for their manufacture - well above the level normally employed in the production of foods where no such claims are made. This includes enhanced management of ingredients, production processes and analytical assurance. An excellent guidance document on free-from allergen claims and the considerations for their manufacture and labelling is available from the **UK Food and Drink Federation** and a number of service providers to the industry also provide helpful guides for '**free-from**' food production.

Ingredients must be free-from the allergen and assurance processes must be in place to ensure this is effectively managed in the supply chain through raw material risk assessment, audit (including third party certification), specification management and analytical assurance. Similarly, measures must be in place in the manufacturing of such products to ensure the allergen is not introduced through formulation errors or cross contamination during manufacture and storage. Measures such as the use of dedicated storage areas, utensils and equipment are often employed together with the use of colour coding. In addition, workers may be assigned to only handle 'free-from' products with associated dedicated clothing. Where the same equipment is used for free-from and allergen containing products, production scheduling is essential so that the free-from product is manufactured/packed before the allergen containing food. The equipment will require an "allergen" clean after the allergen containing product has been produced on the line and prior to re-use for the free-from product.

An area of particular focus with 'free-from' foods is in packing and labelling. Many product recalls have been caused by packing a non-free-from product into 'free-from' packaging, creating a significant risk to the consumer. Mislabelling is also a significant driver of allergen recalls, either because the wrong label was applied after packing or allergens were not correctly declared in the ingredient list.

A **review of food allergen recalls in the UK** between 2016 and 2021, highlighted that nearly 7% were attributed to free-from foods that were demonstrably not free-from the stated allergen/ingredient. Of the 597 allergen recalls over this period (free-from and non-free-from foods), 40% were due to omission of the allergen from the ingredients list, 19% due to cross contamination and 17% due to mispacking.

Analytical testing is also a critical part of any free-from assurance programme. This should be risk-based and considered at every stage of the process, from ingredient receipt, cleaning verification and in-process/end-product testing. There are things that must be taken into account when conducting testing for allergens, including the sensitivity, specificity and suitability of the test for the substrate being tested i.e. food ingredient, environmental sample, etc. A **wide variety of tests are available** for use on line or near line and on ingredients and products but it is essential that where tests are being done in house, these are routinely cross checked with tests conducted in laboratories using **accredited methods of analysis**. You can find a list of accredited laboratories and their scope of analysis in the UK **here**. It goes without saying that such laboratories should be using appropriate **reference materials** and that they participate in **allergen proficiency testing schemes**. The Institute of Food Science and Technology has produced a very useful **guide to allergen analysis** and BRCGS has produced a guideline to sampling and testing specifically for gluten.

Voluntary third party assurance schemes such as **BRCGS Global Standard Food Safety** and other **GFSI recognised certification programmes** do provide a means to effectively manage allergens as part of a food safety management programme. Certification programmes for 'free-from' foods provide additional assurance regarding the control of specific allergens and **BRCGS Global Standard Gluten-Free** has just

assurance regarding the control of specific allergens and [BRCGS Global Standard Gluten Free](#) has just been fully revised. It is an excellent framework for businesses producing gluten-free foods with the benefit of being structured in a way that allows audit and third party certification. It also helpfully incorporates the requirements of the Association of European Coeliac Societies ([AOECS](#)) and therefore provides a means by which businesses can become eligible to apply the AOECS Crossed Grain Trademark on pre-packaged foods.

Consumers of free-from foods, especially those with severe allergy including anaphylaxis, place a huge reliance on food businesses to ensure such foods are always safe to consume and it is essential that the correct standards are applied in their manufacture. I hope I have provided you with some food for thought in relation to the safe production of these foods.

So now it is time to have a customary look at some of the food safety developments, recalls and incidents that have been happening recently.

Artificial Intelligence and the Internet of Things

Hot on the heels of LGC Assure Insights Issue 14, a study funded by the Food and Agriculture Organization (FAO) of the United Nations, has reported on [existing and experimental applications of artificial intelligence \(AI\), big data and the internet of things \(IOT\)](#) in support of national and international efforts to identify emerging risks and provide early warning signals to enhance resilience of food systems to food safety risks. It identifies the opportunities for developments in these areas but also highlights the challenges faced to low- and middle-income countries due to low connectivity and data availability. It is an interesting paper and well worth a read.

Vegan foods and allergies

The UK [FSA has launched a campaign](#) to highlight the risk to people with allergies to animal-based ingredients as many have been dangerously relying on the 'vegan' label as a proxy for the absence of allergens such as milk, eggs, fish, crustaceans and molluscs. The FSA reports that "62% of people who react to animal-based products, or who buy for someone who is, are confident that products labelled 'vegan' are safe to eat, which is incorrect and may be putting them at risk". Although vegan products do not contain such ingredients intentionally, many products may contain low levels of the respective allergens due to cross contamination, making them unsafe for those with allergy. The FDF published useful [guidance on 'allergen'-free and vegan claims](#) and BRCGS has a [plant-based certification programme](#) that includes operational criteria required to be in place to ensure that plant-based products are free of material of animal origin.

Food recall highlights

Microbiological contamination with *Listeria monocytogenes* featured heavily in recent recalls due to widespread contamination of foods with/from a common ingredient source, Cotija cheese ([1, 2](#)). Recalled products included, [Mexican style street corn bites](#), [bacon brunch salad kit](#), chopped salad kits ([1, 2](#)), [torta sandwiches](#), [ensalada kit](#).

Other foods recalled due to contamination with microbiological pathogens included:

- **monocytogenes:** [soya bean sprouts](#), [spinach salad kit](#), [taleggio cheese](#), [sea salt cheese](#) and [enoki mushrooms](#) ([1, 2](#)), [chicken taco kits and meals](#), [enchiladas](#), [telera roll](#), [salad kits](#), ([1, 2](#)), [chicken street taco kits](#) ([1, 2, 3, 4](#)), [chipotle salad kit](#), [black bean dip](#) and [various salad dressings](#)
- **Salmonella :** [flaked almonds](#), [cereal bars](#), [cereal snacks](#), [roasted and salted whole cashew nuts](#), [tahini](#), [beef biltong](#), [corn salad kit](#), [eggs](#), [fruit parfait](#) and [frozen corn](#)
- **coli O157:H7/STEC:** [raw milk cheddar cheese](#), [Lancashire cheese](#), [raw milk soft cheese](#), [sausage](#)
- **Cronobacter sakazakii:** [powdered infant formula](#)
- **Botulism** presented a potential risk that prompted the recall of a [chilli sauce](#)
- A [carved turkey](#) product had to be recalled because an incorrect use by date made the product unsafe to eat

Chemical contamination prompted several recalls including elevated lead levels in ground cinnamon ([1, 2, 3](#)) and [cinnamon powder](#), cyanide poisoning risk from [apricot kernels](#) and [dried cassava flour](#), illegal colours in [hot pepper](#), over-fortification of a [hydration drink](#), pesticide residue exceedance in [dried green pepper](#) and mycotoxin (patulin) in [fruit smoothie](#).

Allergen recalls were numerous once again and included:

- **Milk:** [milk chocolate bars](#), [vegetable pizza](#), [potato chips](#), [pork products](#), [milkshake powder](#) ([1, 2](#)), [chicken pie](#), [tortilla chips](#) and [snack bar](#)
- **Gluten:** [gluten-free doughnut mix](#), [frappe powder](#), and [cookies](#)
- **Wheat:** [hot sauces](#), [hot pepper](#), [beef balls](#) and [cookies](#)
- **Nuts:** [chocolate cherry granola](#) (almonds), [brownies](#) (walnut), [mint cookies](#), [chocolate ice cream](#), [brownies](#), [sauces](#), [cookies](#) and [Thai noodles](#) (peanut), [milk chocolate](#) (hazelnut), [basil pesto](#) (pine nut), [cashew nut butter](#) (almonds, hazelnuts, peanuts)
- **Egg:** [various cakes](#), [prawn dumplings](#), [Hopia cake](#) and [frozen fish balls](#)
- **Fish:** [bbq sauce](#) and [beef pie](#)
- **Soya:** [carrot cake](#) and [chocolate cake slices](#), [carrot cake](#), [tomato and basil rice](#), [tortilla crisps](#), [cupcakes](#) and [tartlets](#)
- **Other/multiple:** [dried mango](#), [dried plum](#), [chicken pies](#), [wine](#), [aubergine puree](#) and [dried longan](#) (catalpa), [sandwiches](#), [mango seed paste](#) and [hummus](#) (sesame), [pesta bala](#) (mustard), [hummus](#)

(sulphites), **sandwiches**, **poppy seed paste** and **nummus** (sesame), **pasta bake** (mustard), **nummus and tzatziki** (sesame and milk), **nut mix** (peanuts, milk, soy, wheat, sesame), **quinoa salad** (egg, soy), **hash browns** (wheat, milk), **chocolate mousse** (peanut and milk) and **Indian masala** (soya, wheat, gluten), **honey roasted cashew nuts** (milk and coconut)

Physical contamination prompting recalls included:

- metal in **tortilla wraps**, **chopped spinach**, cookies (1, 2), **croissants**, **frozen spinach** and **chicken burgers**
- glass in **aubergine pickle** and **bottled red cabbage**
- plastic in **custard pots**, **egg and pepper pate** and **ground meat**
- **moth larvae** in crisp bread, plastic and metal in **chicken paste**
- Delamination of can coating resulted in the recall of an **energy drink** and a potential choking hazard due to the presence of konjac powder prompted the recall of **jelly bars**

I hope this edition of LGC Assure Insights has provided some insight to assist you in your food safety management journey and look out for the next edition coming soon.

All the best,

Alec



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