

# Free from problems with 'free-from'

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A quick look at global recalls in any given week indicates that many food companies struggle, from time to time, with the issue of allergens (Table 1).

This is not surprising, as it is not always immediately apparent that an ingredient, such as bacon, might also contain dairy and cereal allergens (see US example on Table 1). Moreover, legislation can differ across different countries, making it especially difficult for exporters to label products correctly, especially if packaging is produced in a foreign language.

However, the complexity of the issue is no excuse for making mistakes. Aside from the expense and inconvenience of a product recall, there are serious health risks involved in failing to properly label a product that contains an allergenic ingredient. This risk is even greater should mislabelling occur with products that make a positive claim to be 'free-from' a particular allergen.

Allergic consumers put their trust in such products, whereas less definite labelling declarations, such as 'produced in a 'nut free' factory', might elicit some caution amongst sensitive individuals.

However, that is not to say that ambiguous statements are the way forward, because in truth they help no one. Ambiguous statements generate mistrust because they imply that the manufacturer does not know what they are doing and allergic consumers are not helped in finding products they can eat safely. For that matter, manufacturers are not helping themselves to find a huge and growing market amongst allergic consumers.

So, it is always in the interests of consumers and manufacturers to be knowledgeable about the ingredients that are used in a product and to be accurate about declaring their presence.

## Being sure

Having said that, when it comes to consumer safety, there is a world of difference between not making a 'may contain' statement, and being able to make a 'free-from' claim. The latter requires a food manufacturer to have absolute confidence in its own production processes and those of its suppliers. 'Free-from' is an absolute claim, which consumers

Country	Product	Reason
UK	Walnut cake	Undeclared milk derivative
UK	Chocolate products	Undeclared soya lecithin
UK	Sweets	Undeclared gluten
UK	Cornish pasties	Undeclared egg
Australia and New Zealand	Oyster sauce	Undeclared wheat flour
	Milk chocolate scorched almonds	Milk chocolate peanuts
	Potato salad in mayonnaise	Undeclared milk ingredients
USA	Bacon	Undeclared milk and wheat
	Ready meals	Undeclared milk and wheat
	Corn cookies	Undeclared egg
	Noodle products	Undeclared cod and lobster

Table 1. Problems with labelling.

may interpret as a complete absence. However, analytical science cannot demonstrate complete absence, only absence above the limit of detection. So, for a variety of reasons it is easier to establish and substantiate 'free-from' claims for some allergens than it is for others, though none are impossible if the correct steps are followed.

## Nuts and nut-allergy

Nuts can be used to illustrate many of the steps that must be taken to produce a 'free-from' product.

Peanuts (*Arachis hypogaea*) are not actually nuts, yet few of us would accept that a 'nut-free' product might contain peanuts, and this exposes a difficulty in labelling. There are similar potential difficulties in defining eggs, crustacea and milk, especially when used in other ingredients.

Similarly, given that more than 75 different types of nut have been implicated with allergenicity, a 'nut-free' product must be free of all nuts and some ingredients that are not nuts at all. Lupin flour, for example, is known to be a potent allergen for some individuals sensitive to peanuts. It would be foolish to have a 'nut-free' product that contained lupin flour.

## Setting a 'nut-free' strategy

To avoid the unintentional presence of nuts or nut residues in products, wherever possible, it is necessary to evaluate all routes of likely contamination – from sourcing raw

materials through to the marketing of a finished product. This is most effectively accomplished using HACCP principles. All Critical Control Points must be documented and controls put in place to prevent contamination, with internal auditing used to ensure that they are effective.

Most food producers already employ Good Manufacturing Practices (GMP) to ensure safe food production. GMP requires appropriate manufacturing operations, effective food safety systems (linked to HACCP based principles), and quality assurance systems, as well as the commitment and discipline to ensure products meet food safety, quality and legal requirements. With respect to 'nut-free' manufacture, the key areas outlined below need to be considered:

**1 Training and communication.** Education is key to allergen control. All employees must be fully committed to the policy and aware of the implications of failings. Training sessions should be tailored to meet the specific operational sectors of the organisation and include temporary staff and contractors, covering issues such as cross-contamination risks, hand washing, clothing, re-work, waste control, cleaning, and dedicated equipment use. In addition to these basic training requirements, where colour coded systems are used to segregate equipment, staff training should ensure that they are able to identify colour differences (i.e. include checks for colour blindness).

**1 Raw materials and supply chain.** The stringent policies adopted to exclude nuts need to extend to the entire supply chain. For a facility switching from non-dedicated to dedi-

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cated 'nut-free' production, this usually requires some fairly exhaustive preliminary work. Initially, all suppliers should complete an extensive allergen questionnaire to qualify the risk of contamination in their ingredients or facilities. This needs to be followed up by a third party audit using the questionnaire as the basis for the audit standard.

If core ingredients cannot be sourced 'nut-free' from the usual supply chain, then alternative suppliers should be sought. Failing that, it may be appropriate to work with a given supplier to adopt more stringent allergen control measures.

Once the supply base is established, the 'nut-free' policy can be further reinforced using binding supplier contracts, which should extend to the purchase order system.

**1 Analytical testing – ingredients.** Before deciding on a supplier it is vital to conduct an initial ingredient screening regime to validate the findings from the supplier risk questionnaire/audit. Testing should be conducted by an independent, accredited laboratory, using the most sensitive, validated methods available. The findings from this initial screen can then be used to construct a matrix based on analytical results and audit findings. Only those suppliers who meet both of the prerequisites should be sanctioned.

This level of screening needs to be maintained until confidence has been gained in the 'nut-free' status of ingredients and should be mandatory for all new production batches. Once confidence had been demonstrated, the sampling frequency can be reviewed accordingly. A policy of positive release should be applied to ingredients entering the facility and a holding area in the warehouse set aside to quarantine incoming materials. The detection of a 'positive' result above the action limit (quantifiable result) should automatically trigger the ingredient being rejected and the supplier/ingredient

being re-instated to the original sampling frequency, until it can be reliably demonstrated that the contamination issue has been resolved.

This approach requires an open dialogue with suppliers so that changes in their respective supply chains, site design/layout or production process are immediately communicated. All suppliers should be audited on an annual basis to ascertain continued compliance to the 'nut-free' policy.

The same stringent level of testing also needs to be applied to the finished product and a matrix maintained in much the same way. The frequency of testing can be reduced once confidence is gained in production. Sampling plans should again be governed by hazard and risk analysis. It is essential that sound crisis management/product recall procedures are in place to be called on should a contaminated product be detected.

**1 Sanitation.** Plant sanitation matters most where non-dedicated equipment is used for 'nut-free' production. For dedicated or strictly segregated production, intensive allergen sanitation is a prerequisite following plant or zone dedication. Theoretically the only other scenario where intensive allergen sanitation would be required is following detection of contamination. However, all cleaning processes must be validated using environmental monitoring tools such as process swabs coupled with rapid diagnostic techniques.

**1 Manufacturing premises, equipment and processes.** Dedicated manufacture seeks to completely exclude the physical presence of the specified allergen from site. Where dedication is not possible, the only sensible alternative approach is to create a 'nut-free' production zone. Within the 'nut-free' zone, all processing equipment should be dedicated and completely sealed to prevent airborne particulate contamination from other

manufacturing zones. Separate air pressure and air conditioning systems are essential.

Colour coding of all processing equipment and clothing will help reflect their respective dedication. Each zone should have its own changing rooms, development kitchens, QA laboratories, engineer's tools and workshops, tray wash machinery, canteen, first aid rooms and even office equipment.

Dedication should extend into the warehouse where all raw materials used in 'nut-free' and nut-processing should be segregated through separate intake and storage areas. Clear signage can be used extensively to reinforce training messages.

**1 Labelling.** Even with all of the assurances offered by strict controls and analysis it is impossible to guarantee that a product is truly 'nut-free'. This is vitally important considering the extremely low provoking doses associated with nut proteins.

That said, other allergens may be easier to control and exclude, thereby strengthening the commercial case for a manufacturer to produce and label a 'free-from' range.

## Conclusion

With care, and a good deal of effort, 'free-from' production is possible. But there are no short cuts to getting it right, and huge risks involved in getting it wrong. Every manufacturer must weigh up the commercial advantages for themselves, before deciding the appropriate strategy for dealing with allergens. However, even where full scale 'free-from' production is not being claimed, many of the strategies employed will be helpful to manufacturers in ensuring that their labels accurately reflect the content of their products, and that consumers are protected from allergen risks. n

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