

Risk information – Liability

Food allergens

Mitigating the exposures of food allergens



Food allergens can elicit a range of reactions in the sensitive individual including skin rashes, diarrhoea, and anaphylactic shock which can result in death. These reactions differ to food intolerances, which include metabolic disorders and idiosyncratic reactions; examples of these include lactose intolerance and migraines from chocolate respectively.

Food allergy or food hypersensitivity is either immunoglobulin or cell mediated. In this Risk Improvement Guide we discuss immunoglobulin mediated reactions.

In Australia (as at the time of publication) the Mandatory Warning and Advisory Statements and Declarations clause of the Australian and New Zealand Food Standards Code states that when present as an ingredient, compound ingredient, food additive or processing aid or component thereof the following food allergens must be declared on the label of the food package:

- ▼ Cereals containing gluten and their products,
- ▼ Added Sulphites in concentrations of 10mg/kg or more,
- ▼ Crustacea and their products,
- ▼ Egg and egg products,
- ▼ Fish and fish products,
- ▼ Milk and milk products,
- ▼ Tree nuts and sesame seeds and their products,
- ▼ Peanuts and soybeans and their products.

In those instances where food products are exempt from requiring a label the above food allergen information must be displayed in connection with the food or supplied to the purchaser on request.¹

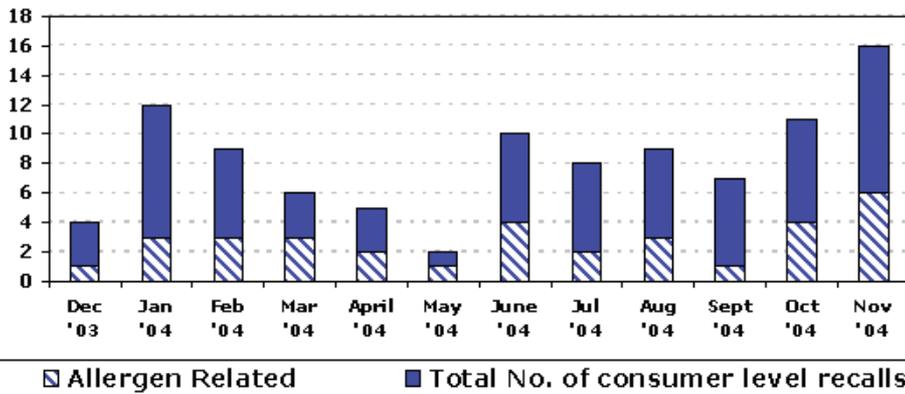
These food products account for almost 90% of all foods associated with cell mediated allergies, with over 160 other foods accounting for the remaining 10%.²

The result of a food allergy in a sensitive individual can be fatal with hundreds of deaths reported worldwide due to food-induced anaphylactic shock.

Food allergies require a degree of avoidance in the diet and selectivity by the sensitive individual. This in turn places an enormous responsibility on the Food and Beverage manufacturer to control food allergens at a site level to ensure products are adequately and correctly labelled.

1. The Australian and New Zealand Food Standards Code, Commonwealth of Australia, published Anstat Pty Ltd. 2001. (Valid at the time of publication.)
2. Hefle et al, 1996, Critical Reviews in Food Science and Nutrition 36:569-589.

Consumer Level Recalls Dec 2003 to Nov 2004 Totals / Allergen Related



Graph 1: Consumer level Food Recall Statistics due to incorrect labelling of Allergen containing products Dec 2003-Nov 2004.³

As Graph 1 illustrates customer level recalls initiated due to the presence of potential food allergens from an incorrectly labelled product accounts for a substantial amount of Food and Beverage Industry recalls in Australia. In order to reduce third party injury, the cost of recall expenses and the damage to the company's reputation, this exposure requires proactive mitigation.

Risk management methods

The presence of food allergens both advertently and inadvertently occurs at a number of stages throughout the food research, formulation and production stages. These processes require monitoring and control to ensure the final packaged product is labelled adequately to represent its contents.

At both a national and site level an Allergen Assessment & Control Program should be established to assess and mitigate current and potential food allergen exposures such a program should consider the following:

Research and development

During product development a risk assessment should be conducted highlighting potential allergen sources such as raw materials, raw material suppliers and transport contamination potential. The research and development area should acknowledge the limitations of production facilities and where possible consolidate those manufacturing sites containing food allergens. New and existing product formulations should be assessed for the presence of food allergens with ingredient alternatives of comparable functionality utilised where possible.

When designing a facility or process that may contain food allergens consideration should be given to the engineering and system design. The system design should endeavour to eliminate potential areas for cross contamination such as shared pipe work and valves, dead ends, exposed product or overhead production lines.

Ideally a dedicated manufacturing facility should be established with production, warehousing, equipment, cleaning and sanitation and operators segregated by physical means depending on the food allergens present.

Vendor assurance program

Supplied ingredients and additives can be a source of food allergens within the production facility and product. The purchaser should request the details of all components within a supplied or sub-contracted product prior to purchase including specific information of protein quantities for ingredients derived from allergenic sources. This information should include not only main ingredients but also flavours, processing aids, oils and packaging.

This requested supplier information should include specific reference to those food allergens mentioned in the Australian & New Zealand Food Standards Code. The assessment and documentation of this information should be utilised to determine the suitability of supplied products and special precautions required at a site level to reduce cross contamination exposure. This in turn will impact on product labelling; ideally labelling should provide detailed information to the consumer as to the source of the food allergen.

The Vendor Assurance Program should incorporate the auditing of suppliers not only for quality standards but also for their control of food allergens; this should include an assessment of production techniques and other products the supplier manufactures.

Warehousing strategies

Ideally a dedicated warehouse should be utilised for the storage of food allergens. If the facility adopts a mixed storage warehouse other mitigation strategies should be considered such as:

- ▼ Storage of potentially allergenic food products in a segregated area.
- ▼ Storage of allergens on the lower shelves.
- ▼ Closure strategies for open allergen products.

3. FSANZ website www.fsanz.com

Production strategies

A number of production strategies can be implemented at a site level to minimise exposure to cross contamination due to potential food allergens these include:

- ▼ The utilisation of dedicated lines where possible.
- ▼ Schedule allergen products at the end of the production run prior to a major clean.
- ▼ Minimise change over and cleaning cross contamination potential by scheduling like group allergens together or schedule a single day for food allergen production.
- ▼ Food allergen additions where practicable should be introduced to the end of production (whilst ensuring product safety) this minimises the amount of contaminated equipment.
- ▼ Segregate and use dedicated products, equipment and people in production areas. Where possible do not encourage thoroughfares.
- ▼ Educate staff of the risks of potential allergens.
- ▼ Utilise colour coded equipment for allergen contact surfaces.
- ▼ Monitor and control products for rework, define procedures and authorities for rework, the allergen status of all rework products should be defined.
- ▼ Segregate product containing food allergens for rework, clearly label and colour code containers.
- ▼ Include a thorough risk assessment in the Hazard Analysis Tables detailing potential exposure at each stage of production from material receipt to dispatch.

Cleaning and sanitation

The adequacy of cleaning and sanitation of production equipment should be verified via analysis of rinse water and or the first product manufactured after product change over for the presence of the potentially cross contaminating food allergens.

Labelling/packaging

All products should be clearly labelled as defined in the Australian and New Zealand Food Standards Code. Art work and in line packaging controls should be present to minimise art work errors and to ensure the correct product and packaging are utilised.

Many individuals are sensitive to food allergens consequently the Food and Beverage manufacturer should display due diligence in the control and mitigation of food allergen exposures via an Allergen Assessment and Control Program.