

# Food Allergens within the Regulatory Landscape and Food Safety

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The prevalence of food allergies keeps increasing throughout the years, creating growing health problems around the world affecting children and adults.<sup>1</sup> Although there is ongoing research to try to ameliorate the effect of food allergens in sensitive individuals, to date the most effective approach to preventing an allergic reaction to a specific food product is to avoid consumption of that food. Individuals with a food allergy are especially cautious in the selection and preparation of foods they will consume. One of the most important sources of information for consumers is the product label. Failure to clearly declare that a food allergen is present in a product poses a tremendous risk to an allergic individual. Without proper labeling, individuals with food allergies will be unaware of the presence of the allergen in a product that is about to be consumed. Thus, it is very important that food businesses provide clear and accurate information about the presence of allergenic foods present in the products they are commercializing.

It is not surprising that regulations and global recommendations regarding allergens often refer the correct declaration of specific foods that are known to cause an adverse reaction to sensitive individuals. These regulations are designed to facilitate the identification and avoidance of foods that contain major food allergens by allergic consumers and to assist food businesses in the adequate declaration of known allergenic foods. The Food Allergen Labeling and Consumer Protection Act (FALCPA) of 2004 in the United States became effective in 2006.<sup>2</sup>

Under this regulation eight food groups were listed as major food allergens and thus should be declared on the label; milk, egg, fish, crustacean shellfish, tree nuts, peanuts, wheat and soybeans. Traditionally these are known as the “big 8.” In Europe the EU Food Information for Consumers Regulation No. 1169/2011 (EU FIC)<sup>3</sup> and the Food Information Regulations (FIR)<sup>4</sup> 2014, indicate that all food businesses should declare 14 major allergens including the “big 8” and cereals containing gluten, celery, mustard, sesame, mollusk and lupin. Globally, CODEX in section 4.2.1.4 of General Standards for the Labelling of Prepackaged Foods,<sup>5</sup> also states that the “big 8” allergens in addition to cereals containing gluten should always be declared. Although sulfites, are not considered as allergens, the symptoms caused by ingestion of sulfites in sensitive individuals are very similar to those caused by a food allergen; they are contemplated within the declaration of allergenic foods in the European regulation as well as CODEX.

Other countries like Australia, New Zealand, Japan, Canada, Argentina, Mexico and Brazil have similar requirements for the “big 8” and additional known food allergens.<sup>6</sup> If certainly there are many different foods that can elicit an allergic reaction, the foods listed in the regulations listed above can cause most of the cases of food allergy,<sup>2</sup> however some countries based on dietary preferences and culture have chosen to add additional foods that should also be declared. With the globalization of the food supply around the world, it is important to consider labeling requirements if manufactured products will be exported.

Regardless of the required declaration of allergens by several countries, it is estimated that more than 40% of food recalls are associated to undeclared allergens,<sup>7,8</sup> many of these recalls are results of incorrect labeling, or unintended contamination with food allergens. Thus, other efforts to prevent food allergy should also be considered by food producers to ensure adequate declaration of allergens and to prevent unintentional contamination during the manufacturing process. The Food Safety Modernization Act and the proposed Code of Practice on Food Allergen Management for Food Business Operators utilize a preventive approach by requiring the establishment of allergen control plans

that include strategies and procedures to ensure proper declaration of allergens and prevent unintended contamination. One important preventing control would be allergen cleaning; verification of cleaning standard operation procedures through testing enables continuous monitoring to determine if shared equipment has been cleaned and allergenic foods are not detected on the equipment surface. Adherence to labeling requirements is critical to the protection of consumers from allergens that are present in foods by design. However, controls to prevent the unintentional introduction of allergens into foods are equally important as it protects consumers as well as food processors.

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## Biographies

### Gabriela Lopez Velasco, Ph.D.

Dr. Gabriela Lopez Velasco, based in St. Paul Minnesota, has been a Global Technical Service Specialist at 3M Food Safety since 2015. She works as part of the global technical service and application engineer teams leveraging her expertise in food safety to provide technical training and application of 3M Food Safety portfolio. She currently oversees the 3M™ Allergen Testing platform. She received a degree in Food Chemistry from the National Autonomous University of Mexico (UNAM) and her doctorate in food science and technology from Virginia Polytechnic Institute and State University. She worked as a postdoctoral researcher at the University of California, Davis.

### Ken Davenport, Ph.D.

Dr. Ken Davenport earned his undergraduate degree in Chemistry from Spring Arbor University, Ph.D. from the Department of Biochemistry at Rice University, and an MBA from the University of Minnesota. With over 18 years of experience in the food industry and 21 years' experience with rapid method development and applications, Dr. Davenport has a broad and deep background in both chemical and microbial food safety. Currently, Dr. Davenport leads a group of scientists at 3M Food Safety Department headquarters in St. Paul, MN, where they continue to push the boundaries on new technologies for the detection of chemical and microbial contaminants in food and the food manufacturing environment.

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