

Food Safety in the Retail Grocery Market – Who's Responsible?

Effective food packaging can retard product deterioration, retain the beneficial effects of processing, extend shelf-life, and maintain or increase the quality and safety of food. In doing so, packaging can provide protection from 3 major external influences as follows:

- 1) **Chemical protection** minimizes compositional changes triggered by environmental influences such as exposure to gases (typically oxygen), moisture (gain or loss), or light (visible, infrared, or ultraviolet). Many different packaging materials can provide a chemical barrier. Glass and metals provide a nearly absolute barrier to chemical and other environmental agents, but few packages are purely glass or metal since closure devices are added to facilitate both filling and emptying. Closure devices may contain materials that allow minimal levels of permeability. For example, plastic caps have some permeability to gases and vapors, as do the gasket materials used in caps to facilitate closure and in metal can lids to allow sealing after filling. Plastic packaging offers a large range of barrier properties but is generally more permeable than glass or metal.
- 2) **Biological protection** provides a barrier to microorganisms (pathogens and spoiling agents), insects, rodents, and other animals, thereby preventing disease and spoilage. In addition, biological barriers maintain conditions to control senescence (ripening and aging). Such barriers function via a multiplicity of mechanisms, including preventing access to the product, preventing odor transmission, and maintaining the internal environment of the package.
- 3) **Physical protection** shields food from mechanical damage and includes cushioning against the shock and vibration encountered during distribution. Typically developed from paperboard and corrugated materials, physical barriers resist impacts, abrasions, and crushing damage, so they are widely used as shipping containers and as packaging for delicate foods such as eggs and fresh fruits. Appropriate physical packaging also protects consumers from various hazards. For example, child-resistant closures hinder access to potentially dangerous products. In addition, the substitution of plastic packaging for products ranging from shampoo to soda bottles has reduced the danger from broken glass containers.

Package design and construction play a significant role in determining the shelf life of a food product. The right selection of packaging materials and technologies maintains product quality and freshness during distribution and storage. Materials that have traditionally been used in food packaging include glass, metals (aluminum, foils and laminates, tinfoil, and tin-free steel), paper and paperboards, and plastics. Moreover, a wider variety of plastics have been introduced in both rigid and flexible forms. Today's food packages often combine several materials to exploit each material's functional or aesthetic properties. As research to improve food packaging continues, advances in the field may affect the environmental impact of packaging.

Manufacturers and Growers have, by and large, done an effective job in food packaging to protect the consumer and research is ongoing for further enhancements.



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The challenge is in the retail environment, particularly in the “fresh” departments including deli, bakery, seafood, and produce. In many cases, food preparation for retail presentation is done in store where the food product comes in contact with store equipment, fixturing, and serving trays, and baskets.

To ensure food safety in this environment, it is imperative that the food retailer is

- a) Executing high standards of hygiene including decontamination of equipment, fixturing and serving trays on a regular basis.
- b) using only equipment, fixturing, serving trays, etc., that have been approved by regulatory agencies (such as the USA Food and Drug Administration) for direct contact with food. There are many suppliers today of food equipment, fixturing, serving trays and other retail service items that offer products to the retailer that are not approved for direct contact with food. Vivid examples include wicker baskets, plastic serving trays, and other merchandising products including plastic bags that are manufactured in Asia in sub-standard facilities employing re-cycled or, otherwise non-hygienic materials.

In North America, most of the retail chains are aware of directives of the FDA (Food and Drug Administration) and local health authorities on this subject, but unfortunately do not believe that it their responsibility to monitor and police the possible use of these materials in their stores. Retailers blame government authorities for lack of implementation of current regulations.

In Europe there are still many chains that are using products without the necessary food safe certifications. The EMA (European Medicines Agency – Counterpart of the FDA in Europe) isn’t recognized as it should by all Countries of the European Union, with each country having its own government agencies, sometimes adopting very different directives.

The above agencies, the FDA and EMA, defines food contact substances as *‘any substance that is intended for use as a component of materials used in manufacturing, packing, packaging, transporting, or holding food.’*

In both cases, there is a general lack of responsibility of who is responsible for consumer food safety. Placing consumer health and safety at risk is not surely just a government regulatory responsibility, but a moral and ethical responsibility of each and every retailer, and supplier of products to food retailers. Senior management in these organization must implement higher standards for purchasing approval including proof that these products have been approved for direct contact with food.

It is no longer acceptable for retailers and suppliers to pass the “buck”. What is your organization doing to ensure food safety for items prepared in store that come in contact with surfaces, packaging, and small wares?