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Risk reduction in retail  
and restaurant quality  
assurance practices

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# Introduction

Assuring the quality of the food and identifying its risks is an increasing focus for retail, restaurant, and manufacturing industries, along with U.S. and foreign countries. In selecting the applicable quality assurance program, companies should analyze the risks, benefits, and costs of the program. Quality assurance is gaining higher visibility as the many quality attributes of a product become more valuable to customers.

Food safety may be defined simply as taking the steps to keep food safe to reduce foodborne illness. Therefore, food safety has a direct impact on the reduction of risks that occur in the food. Quality may be defined as those standards and attributes of a particular product that meet the expectations of the user. Although many specialists believe food safety and quality assurance may be separate but complementary programs, food safety issues and risks should be viewed as a component of quality.

Retailers and restaurants are tasked with improving food and product safety while providing quality food, protecting the brand, and increasing sales. Food safety ranks as one of the priorities facing the industry in response to rising consumer concerns, evolving food and product safety standards, and increasing regulatory requirements. During the last 10 years, food safety has shifted from a “hazards-based approach” to a “risk-based approach”. Food is no

longer deemed unsafe because the hazard has a presence in the food, but whether the exposure to that hazard has a significant impact on the public. Many laws, regulations, policies, procedures, and programs have also shifted to using a risk-based approach to food safety. This approach can help consumers proactively identify problems and risk factors that may cause illness.

The industry is encouraged to deal with increased risks that may have a potential impact on their financial performance and their brand. Food and product safety, along with sound quality assurance, cannot be ignored given increased regulatory requirements, extended supply chain complexity, increased frequency of foodborne illnesses, recalls, and customer complaints. According to current estimates from the Center for Disease Control, there are 48 million illnesses, 128,000 hospitalizations and 3,000 die annually of foodborne illness<sup>1</sup>. To date, the industry uses food safety and quality assurance programs of in-house staff or third-party food safety service providers to determine the integrity of their food safety and quality programs. Despite the efforts of the industry, there is still a potential for considerable risk to the customers and their brand. As a result, an encompassing food and product safety/quality assurance program should be part of the company’s core mission and business plan.

# Challenging factors in manufacturing/production

Manufacturing and production includes businesses such as manufacturing operations, agriculture, aquaculture, food storage, food processing, wholesale or retail sales, restaurants, and other food service operations. With the growth of the world's population and urbanization, along with a global food supply, food supply chains have become increasingly complex and important. The promotion of food quality and safety today requires specific knowledge and the ability of everyone in the food sector to meet basic food regulatory requirements. Businesses that limit resources to control food safety risks may fail to address other critical issues such as economic risks, adulterated ingredients, or food composition. Accordingly, this requires the creation and implementation of food quality systems that promote the composition, nutritional value, and safety of foods. Therefore, an applicable food quality system from farm to fork is essential to controlling food risks.

Developing, testing, and implementing applicable control and verification systems requires a high level of knowledge of factors that are important in the production of good quality, safe, and wholesome foods. The prevention of the deterioration of the quality and safety of foods prior to consumption requires knowledge of food quality systems across the supply chain. The challenges food manufacturers face have consequences for the retailer, the restaurateur, and their safety and quality programs if risks are not adequately addressed.

Basic risk prevention that should be part of a good food safety program includes:

## 1. Physical adulteration and supplier evaluation

- Physical adulteration is a growing concern and a plan should be in place for removing those physical objects that could contaminate the food while being manufactured, packaged, transported and handled before it gets into the hands of the end-consumer.
- Suppliers should have effective and consistently executed food safety systems to provide safe products to manufacturing facilities. This is critical to protect company brands which are typically put at risk during foodborne illness outbreaks and/or during the recall of unsafe adulterated products. Supplier evaluations and constant monitoring of those suppliers is crucial to maintaining food safety and providing additional quality assurance to those brands while effectively reducing ingredient costs.

## 2. Allergen contamination/control

- Allergen contamination, whether direct or indirect, plays an important role in food safety and sanitation. Allergic reactions may be major causes of foodborne illness outbreaks, customer dissatisfaction and even death.
- An effective allergen management system and control program is encouraged to include several prerequisite programs for an effective overall system. Sanitation standard operating procedures (SSOPs) and standard operating procedures (SOPs) are written methods that specify practices and programs to prevent food from becoming contaminated due to allergen mismanagement.

## 3. Labeling

- Correct nutrition labels on food are important for customers on a diet that limits or restricts sodium, cholesterol, sugar or certain nutrients due to health risks.
- Although food labels are regulated, they may be deceiving and incorrect without proper oversight and a compliance program which may lead to regulatory actions. There is a concern on understanding and having uniform definitions for nutrient claims such as: trans-fat, reduced, light (lite), and the use of the term natural.

# Challenging factors in retail/restaurants

To preserve the quality of food — whether sold in restaurants, wholesale, or retail outlets — requires close attention to many factors including proper food storage, inherent food service operations, and specific food preparation requirements. The quality and safety of select fresh, ready to eat, semi-processed or processed foods are temperature dependent and should be held under those conditions to maintain its intended purpose. Regarding certain quality attributes, frozen foods should not be allowed to thaw, and cold foods such as dairy products, juices, fresh and processed meats, cheeses, fruits, and vegetables need specific controlled and maintained temperature storage. Even relatively stable products like bread and cereal should be sold on a “first-in/first out” basis to maintain quality standards (no staleness or mold) and to reduce food safety problems (no insect problems).

In food service operations, close attention to personal hygiene and specific SOPs are needed, prompting owners to have specific training manuals and training programs for new and existing employees.

Part of a good food safety program should include the following:

- 1. Supplier risk assessment:** Reduce cost and improve food safety risks by analyzing food sourcing practices, logistics and good manufacturing practices.
- 2. Facility standards:** monitor employee hygiene and health, management systems and facility design should support proper sanitation.
- 3. Traceability requirements:** Product recalls are on the minds of regulatory officials, retailers and processors alike. People, processes and systems should work together to produce an effective program to track risks.
- 4. Production/environmental sanitation:** Controlling bacteria such as salmonella, E.coli, and Listeria. For example, components of a Listeria control plan should include sanitation, temperature control, process control/flow and employee training.



# Contributing factors to food safety risks

In order to analyze food safety risks, limits used in production or processing should be set/determined while identifying possible contaminants in foods. Therefore, performing a risk analysis is encouraged. Risk analysis processes are usually controlled by government agencies through the application of food quality or food safety legislation used to determine potential food risks. However, producing basic risk profiles is the responsibility of both the government and industry. Academia also plays a specific role in addressing research identifiers.

Quality assurance or the quality of products may help a company gain a competitive advantage, build customer loyalty, and extend the brand. However, as corporations continue to expand internationally, the opportunities for increased costs and risks expand as well. Knowing and preparing for risks may alleviate quality concerns. This may be applicable when it comes to being able to identify, analyze, and mitigate risk by driving cost and performance.

Not being able to identify risk may be detrimental. A few years ago, a company that was unable to identify the risk of its cantaloupes being contaminated with Lm (*Listeria monocytogenes*) went out of business. Previous audits had not revealed that Lm was a risk or hazard associated with cantaloupes. According to the Center for Disease Control, "Listeriosis, a serious infection usually caused by eating food contaminated with the bacterium *Listeria monocytogenes* (Lm), is an important public health problem in the United States. The disease primarily affects older adults, pregnant women, newborns, and adults with weakened immune systems. However, people without these risk factors may also be affected. The risk may be reduced by recommendations for safe food preparation, consumption, and storage."<sup>2</sup>

## Technology tools

Technology can be used to analyze risk. The food industry is harnessing management software to develop dashboard reporting and program monitoring. Technology modeling and development tools can help companies mitigate risk and control food safety and quality assurance. Many of these tools may be used off-the-shelf or customized by electronically capturing needed data and organizing it into a single database to create a system. These systems automate and update food safety and quality assurance programs to reduce risks, increase results, and gain compliance within certain guidelines. The review of data may help companies further define and develop strategies to mitigate risk.

Some retail and foodservice operators have numerous SOPs and quality assurance/quality compliance strategies that are associated with food safety and risk mitigation. Software solutions should be designed to track and report these activities, such as sanitation, temperature management and supplier verifications, which makes data management more beneficial in identifying and mitigating risks. For example, supply chain management software, which is a business development application, involves the association between supply chain members to deliver safe food to companies and customers. These software applications count on close collaboration between manufacturers, wholesalers, and retailers thus giving everyone "skin in the game".

# Conclusion

Food safety risks present different challenges to regulatory officials, food manufacturers, retailers, restaurateurs, academia, and consumers. Addressing the quality and safety of food requires parties working together, following scientifically valid laws and regulations to meet the challenges and risks.

Food manufacturers need to understand and meet the regulatory requirements for addressing food risks, and take the steps to promote cost efficient and effective quality control systems in the production, processing, storage, distribution and sale of foods. Retailers and restaurateurs should also have company specific quality assurance programs in place to maintain proper food handling in their food service operations. Academia should continue to educate the consumer, seek applicable funding, curricula, and research facilities to produce knowledgeable and properly trained people for food science careers.

The lack of a food safety and quality assurance programs that fail to mitigate risks may lead to many problems. "Food withdrawals, rejections, and recalls cost the food industry \$7 billion dollars annually. The majority of these costs are not just from "worst case" recall scenarios where people fall ill and lawsuits occur. A large portion of these costs are created by internal reworking, commodity loss, inventory replacement, removing goods from shelves, lost sales and public relations/customer confidence repair. Increasingly, these losses are being spread across participants in the supply chain, including suppliers, manufacturers, distributors, retail/services sellers, 3rd party labs and auditors." <sup>3</sup>

Stakeholders should be engaged to reduce the risks across the food supply. Protecting consumers, brands and corporate image is important and requires a true commitment to reduce foodborne illnesses and provide a high quality competitive product to the marketplace.



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