Food Security and Its Effect on Consumers' Food Bills

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A decade ago, food security focused on the availability of a food supply, not on the umbrella concept that today encompasses quality (nutrition, taste), safety (healthful, not harmful) and availability (supply). How concerned are the consumers? Food security is apparently taken for granted; only nine-percent of consumers surveyed expressed concern. Food retailers were deemed most accountable for ensuring food safety, and farmers/producers and food processors were assumed most responsible for food quality, but food security drew ambiguous responses. Monitoring identifiable points of vulnerability the sites, considering the cost to the industry, would add about $225 to the consumer's annual food bill.

Trace back, or traceability in food-supply-chain management, has allowed retailers to leverage food processors and other food purveyors or intermediaries to be accountable for the source of their product. If a product recall is issued or suspicion about an out-sourced product arises, the original source as well as those in the logistical supply chain can be identified. Although trace back addresses the issue of accountability, it still does not provide a prescription for prevention nor a firewall against either accidental or premeditated contamination—the heart of the food security concerns. Where are the critical points of vulnerability in the food and fiber supply chain? Can they be specifically identified? What monitoring and measurement tools and techniques can be implemented? What is the cost to the industry and to the consumer to ensure a safe and secure food supply?

Background

The occasional recall of food products is usually done as a precautionary measure to ensure food safety, food quality, and the integrity of the food processor. Occasionally the recall is the result of someone actually becoming ill because of an unsafe product. Of course, there are those of us who do recall the headlines about e-coli attributed to hamburger and apple cider, alar contaminating fresh apples, and how a handful of suspicious grapes shut down the Chilean exports of grapes and other fruits decades ago. Consequently, food quality, food safety, and food security are issues of concern to the food distribution industry and to consumers alike. One would think, perhaps, that in light of the events of September 11, 2001, food security would rate very highly in the minds of the consuming public, but surveys by various pollsters suggest only a minimal concern among the general public about food security.

Prior to September 2001, accidental contamination (via pestilence in nature or accidents by employees or other individuals) of the food supply was the primary concern in the food distribution industry; after all, that had been our experience. The notion of intentional contamination was restricted to isolated and minor incidences within a business due to a disgruntled employee and was readily observed and corrected without further spread or distribution of the affected product. But what about intentional contamination as a result of sabotage designed to render large quantities of food as unsafe for consumption? Could it happen, and what actions or interventions could be taken to preclude such a catastrophe? What would it cost the food distribution industry to alleviate this risk? And if the industry cost was passed through the marketing channels to the consumer, how would this cost affect the consumer food bill?

Data and Methods

A case-study analysis of the produce (fresh fruits and vegetables) sector within the food distribution industry reveals numerous opportunities within the transportation and storage of product from field (harvest) to fork (consumer) for the intentional contamination of a problematic quantity of fresh produce. The spread of affected product is further aggravated by the environmental issues that could encourage the growth and cross-contamination of the contaminating agent—namely air flow, water presence, temperature, and shifting/jostling of produce. Tracing the flow of produce from field to fork

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gives rise to the recognition of some control points or loci for quality assurance or contamination (accidental or purposeful) during storage and transportation.

Security measures to guard against the unlawful or unauthorized intrusion onto premises or areas of a firm's operations can and are being increased via cameras, motion detectors, fences, padlocks, and security forces. Additional sensors to measure product and ambient temperature, air flow, humidity or water vapor, and presence of standing water, with electronic data transmission to computers and workstations are either available or modifiable to meet the needs of the produce industry. The cost incurred by the produce-distribution sector for monitoring the various transport and storage activities identified has not been compiled. The seafood, meat and poultry, and dairy-products sectors have transportation and storage issues that parallel those of the fresh produce sector.

Results/Expected Results

Consumer surveys indicate that the food purchaser wants and expects a quality product safe from contaminants or health concerns, and security in knowing that those food products will be available. Some consumers perceive that a safe and secure food supply is a right they should already be paying for at the cashier's checkout. Other consumers acknowledge they may have been taking the food security issue for granted, and that an overall food-bill increase is warranted.

The consumers' demand for convenience boosted food-marketing costs during the 1990s; their demand for food safety and security during the next several years will add to rising food-marketing costs. Expenditures for labor and packaging account for over 60 percent of the total marketing bill. Annual per-capita estimates for a new expenditure category labeled "food security" range from an economic-engineering-model value of $250 upward to industry analysts' suggestions of $800–$1,000 in the marketing food bill.