

Why are we still struggling with Food Safety Plans (HACCP) after 15 Years?

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Codex alimentarius adopted the HACCP system for ensuring food hygiene in 1993.

- There are still significant problems with HACCP systems as evidenced by the foodborne outbreaks originating at Maple Leaf Foods and Peanut Corporation of America in 2008-09.



There are 5 Significant Gaps in HACCP Plan Development



Gap 1

HACCP Plans are implemented over top of a poorly designed business

- The business does not run efficiently
 - Personnel are constantly “fighting fires”
 - There is a lack of accounting
 - Worker safety is compromised
- Food Safety must be part of all operations – it cannot be inspected in after the product is produced
- Implementing HACCP in a poorly designed business results in a business that remains at risk



Gap 1

Solutions

- Use Operations Management/Logistics tools to improve business operations and processes
- Embed or design HACCP and food safety into business operations
- Employ quality systems and tools to continue improving business operations
 - ISO, Q-Base, TQM
 - Lean manufacturing, Six Sigma



Gap 2

Current document and record-management techniques are primitive - SOPs are missing and incomplete

- Current systems for managing records are not designed for managing the documentation needs of a food-based business
- Most off-the-shelf HACCP computer software does not link well with SOPs and their related documents. The scheduling of intermittent tasks is not built in.



Gap 2

Solutions

- Use software designed to manage complex data management systems
- Use other tools to manage activities and link to the associated SOPs
 - Master Task List and Schedule
 - Flowcharts
 - Photos
 - Detailed Work Instructions
- Design SOPs that use the expertise found in other disciplines or programs such as Operations Management and ISO



Gap 2

Solutions

- Set up SOPs for the activities that reflect business strategy and have the greatest potential for increasing the likelihood of a hazard:
 - New Products
 - New Inputs (Supplier Quality Assurance)
 - New Equipment
 - Plant Renovations
 - Verification and Validation of the HACCP System
- Clearly state who is accountable for the activity and state industry-appropriate Corrective Actions for what is important or has historically been problematic



Gap 3

Generic audit checklists do not adequately assess whether food safety requirements are being met

- Audits are not specifically designed for assessing the particular sector or industry nor do they take into account the business strategy
- Auditing and inspection are combined; this leads to fixing the immediate problem during the audit rather than addressing the gap in the system



Gap 3

Solutions

- Direct the audit towards the hazards that are known to exist within the auditee's industry sector
 - Are the hazards that are likely to occur in the sector adequately controlled?
 - Are the hazards associated with the business strategy adequately controlled?
- Use standard audit techniques:
 - Clearly define the goal of the audit
 - Prepare an audit plan that addresses the goal
 - Follow questioning techniques designed to elicit candid answers

Gap 4

Critical gaps in research exist

- Government regulations may state a standard that is not high enough to adequately control the hazard
- The role of research in the evolution of HACCP Plans is not well-understood by industry or food science professionals
- Research that exists is not applicable to industry – existing case studies do not reflect actual industry practices



Gap 4

Solutions

- Perform and publish research and information
 - Method development and validation – pathogen control, raw product ID, product adulteration
 - Combine HACCP principles with Operations Management & Logistics ; collect data
 - Perform research that can be applied more directly to industry



Gap 5

Food Science and Food Technology Graduates are not adequately prepared to develop HACCP Plans

- Faculty do not have HACCP experience
- Food Science education focuses on technical education and training; the courses are not linked together cohesively into a whole
- Academic institutions do not employ basic HACCP/GMP practices in their laboratories and pilot plant facilities
- HACCP literature is still very basic; there is not a significant amount of advanced material



Next Steps

- Publish case studies to demonstrate industry applications:
 - Set up demonstration projects
 - Perform cost-benefit analyses
 - Report on real-life scenarios
- Develop tools for industry appropriate for the company size
 - Develop short-courses containing practical, take-home information and tools
 - Address the gap between available computer technology and current record-keeping practices



Next Steps cont'd

- Set up holistic food technology and food science programs – reinforce HACCP and GMPs in all courses
- Cross-train food professionals in food and business
 - Dual degrees
 - Collaborative university and college programs
- Set up a multi-disciplinary HACCP Centre of Excellence

