

HACCP In The Food Industry

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Hazard Analysis and Critical Control Points (HACCP) is quickly becoming one of the most important issues in the food industry. *Food Manufacturing* spoke with Mike Gay of Rockwell Automation to discuss the latest HACCP technology and trends and how food manufacturers can utilize these tools to improve efficiency, increase cost savings and strengthen product quality control.



Mike Gay, CPG Industry Segment Lead, Rockwell Automation

Q: What are the most important issues surrounding HACCP in the food industry today?

A: Execution is the most important issue surrounding HACCP in the food industry today. Most food and beverage manufacturers have comprehensive manual, paper-based solutions to address a HACCP point in their process. However, paper-based systems are not the most effective means to ensure that the test is completed in a timely manner with acceptable results.

Automated systems provide manufacturers with access to dramatically more reliable real-time information, pinpointing where products were shipped and what components were used in each product. Such technology enables manufacturers to not only meet regulatory demands, but also respond better in product-recall situations – tracking products faster, more accurately, more efficiently and more cost effectively. This also helps manufacturers establish brand value and provide a quantifiable return on investment.

Q: With increased regulations for food quality and traceability, how can food manufacturers implement a HACCP program that is efficient and effective?

A: To achieve optimum performance, manufacturers need timely information about the production process in order to effectively analyze and detect undesirable trends and take immediate corrective action when needed. Once these best practices are defined, manufacturers can enforce them, and where possible, apply the capability to build quality directly into the solution so the product is manufactured correctly

the first time.

Through an effective HACCP Process Management (HPM) solution, users can define the products, processes and equipment necessary for a HACCP test, define the process workflow and present a corrective action for out of compliance test results. This corrective action should include a plan to address these conditions, instruct operations staff and direct action that mitigate risk.

Q: What technology is available to help food manufacturers monitor and control potential safety hazards?

A: Using today's automated tracking and tracing tools, manufacturers can examine even the smallest factors that might impact final quality. A producer of cookies, for example, might look to see if final quality is impacted by the use of a specific mixer or industrial oven in the manufacturing line. External factors, such as water supply and relative humidity, can also be isolated to examine the impact on a batch's final quality.

Identifying granular areas for improvement generally requires a systematic approach to data collection, requiring tracking and tracing tools capable of analyzing specific data points. Properly implemented automated tracking and tracing solutions can collect this critical production data and provide applications that give users the ability to analyze and understand relationships to determine the cause of quality problems.

Q: What potential effects can a HACCP program have on food manufacturers and consumers?

A: Improved Data Collection and Reporting — An automated HACCP program provides the ability to collect genealogy data more effectively with increased accuracy, and store it electronically in an auditable database where the information can be integrated with supply chain information. Such technology enables manufacturers to not only meet regulatory demands and respond faster in product-recall situations, it also is much more accurate and cost effective because it allows for manufacturers to:

- Accurately and electronically collect tracking details at all stages of production
- Identify the source of ingredients used in or allocated for food production
- Identify businesses to which products have been supplied
- Adhere to tracing systems and procedures
- Make tracing information available to authorities on demand
- Adequately label or identify products

Enhanced Supply Chain — In an effort to reduce extra inventory held in stockrooms, many retail outlets are looking for manufacturers to ship just enough product to replenish their shelves. In an increasingly competitive market, food manufacturers without the ability to respond to such demand run the risk of losing

valuable contracts.

However, to schedule production and get the product there on time, food manufacturers require real-time information on variables such as the status of current production, what is being manufactured, how much has been produced, and where it's at in the shipping process. An automated track and trace solution provides the ability to track production through each manufacturing area, supplying the key data needed to make informed decisions on actual completion dates. Advanced systems can also help manufacturers better meet customer requests for expedited orders by easily revising production schedules and more directly routing priority products through the manufacturing process.

Increased Inventory Accuracy — Food and beverage manufacturers also are working to reduce costs and increase efficiencies related to inventory. To meet such goals, companies can use tracking and tracing systems to monitor and record actual usages in real-time, enabling far more precise inventory control compared to manual systems where cycle counting is typically the norm.

Additionally, automated solutions can track the amount of actual material used at each stage of the manufacturing process and automatically deduct from inventory levels in the business systems. This enables manufacturers to track inventory levels in real-time and order only the amount of raw material needed – an advantage that eliminates the need for extra stock, frees capital and reduces overall operating expenses.

Reduced Costs — Collected through an automated tracking tool, raw data can provide a more complete view of the actual cost to manufacture each product by identifying the costs for each step in the production process, including:

- Actual amount of raw materials used
- Yield from conversion processes
- Quantity of good product produced
- Amount of scrap
- Labor costs involved in each process step
- Utilities employed and their quantity
- Cycle time for each step
- Equipment performance, including efficiency, downtime, cycle time and production rate

Using such data, companies can examine specific costs associated with individual production areas and help business leaders make decisions that will help reduce manufacturing costs. Additionally, data can be compared to actual-cost data in the company's business system, enabling a step-by-step comparison of actual costs at each step of the manufacturing process. For example, waste streams can be analyzed to determine total cost, and then superior production days can be compared to sub-par days to understand differences in cost and the potential value achieved through superior performance.

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Q: What critical steps do food manufacturers need to take to ensure the safety of the food supply?

A: Commercial off-the-shelf food and beverage HACCP solutions can be applied to a process quickly and cost effectively. These packaged solutions have all HACCP functions configurable by the end users enabling a quick return on investment. No longer limited to collecting data on product yield and quantity, today's tracking and tracing tools are helping manufacturers implement revolutionary new capabilities to improve efficiency, increase cost savings and strengthen product quality control.

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