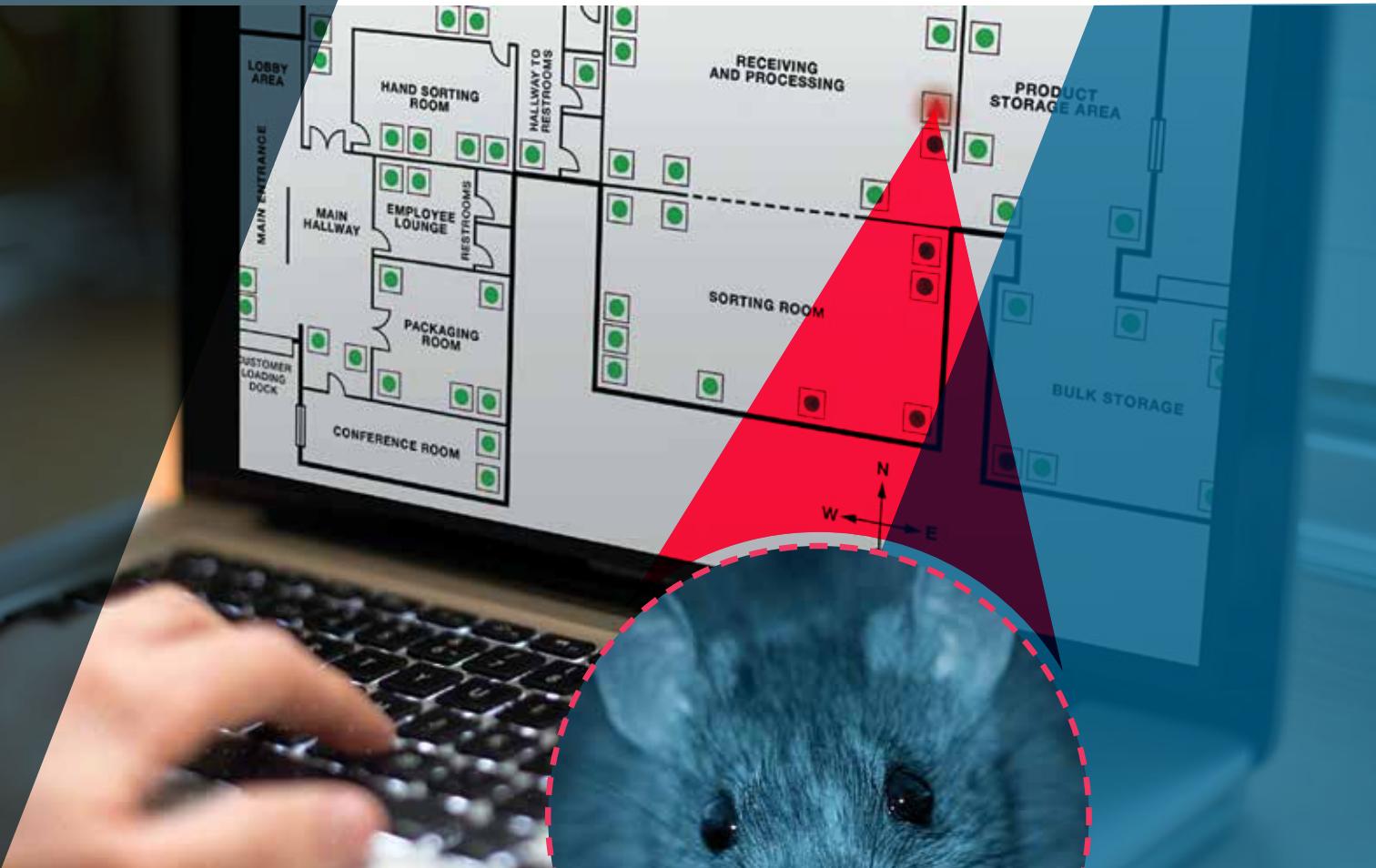


INDUSTRY INSIGHTS:

The Future of Rodent Control



Why Now is the Time to Change Your Protocol

It's Time for a Higher Quality Program

By Joe Barile



Joe Barile

Simply put, the Food Safety Modernization Act (FSMA) means that it's no longer acceptable to have a reactive food safety policy. There is a new emphasis on proactive measures to safeguard public health.

That said, whether your pest control is managed in-house, or you hire a professional pest management company, odds are "service" is focused on the rote practice of trap checking, which is neither cost-effective, nor does it provide the holistic IPM strategy that focuses on proactive inspections that ensure FSMA compliance.

You should be challenging your service provider, holding them to the standard of this new obligation. To understand the state of the industry and what food managers need to be considering when it comes to rodents, I contacted Richard Kammerling, founder of RK Pest Management Services, whose half-century of experience gives him a unique vantage on the hallmarks of an expertly managed food safety program – past, present and future.



Richard Kammerling

Joe Barile: How would you characterize the current state of the industry?

Richard Kammerling: The food industry has a problem where they sometimes assume everything is fine even when it's not. And sometimes they're not willing to pay the price to make sure their program is working properly until they have a real problem. One of the biggest problems in the food industry is they underestimate the time that is needed to properly perform a pest management program. The food industry tends to be reactive rather than proactive. If they're not given the information to know a condition could be or is an issue, then they don't address it as such.

JB: So, what should food managers be requiring from service providers?

RK: Service providers should be acting as diagnosticians. Say, through trap-checking, we found one mouse in a trap. Is it only one mouse? Or is it an infestation? What are the conditions that caused it? Most of the pest control industry is going around the perimeters, but they're not doing the entire scope of the food warehouse.

If you can find a pest-vulnerable condition and eliminate it, that's the key to an effective IPM program. Collecting data can help you find some of these conditions, but analysis of that data and inspections are key to a pest management program – and that's what food safety managers should be demanding of their pest managers, internal or external. Most pest control today is based on trap checking and does not leave enough time for inspections or data analysis.

JB: It sounds like asking service providers to find more time. Where is that time going to come from?

RK: Electronic Rodent Monitoring Systems (ERMS) enable that time to perform necessary inspections. Your internal team or the pest management professional you hire could free up 75% of their time by having an automatic, 24/7 trap monitor. They could use that time they save on manually checking traps to do the things that are necessary to diagnose a condition that has created, or has the potential to create, a pest problem and take action.

Electronic Rodent Monitoring Systems will be the wave of the future. They take away most of the time for "trap checking" and give more time to do the quality, proactive work: inspections and data analysis. 🌐



IoT in Food Processing

Digital rodent monitoring systems have the potential to transform the way pest control is performed in food facilities.

Since the passage of FSMA, new requirements for risk-based preventive controls and a written Food Safety Plan have caused significant process change and increased the industry's implementation of technologies to simplify its processes. The growing importance of prevention and documentation are evidenced by a review of the FDA Inspections Observations of 2017, for which noncompliance in pest control was a top-listed observation. These included lack of effective measures to exclude pests or protect against food contamination and lack of written pest control procedures and recordkeeping.

USDA also has increased recordkeeping requirements, such as the recent rule that retailers who grind raw beef products must maintain records on their suppliers, internal production, and equipment cleaning and sanitizing. This can become quite complex when one considers the mixing of ingredients from multiple sources into a single store-made product, such as deli meatballs, soups, or pizzas.

"The implications of the rule impact the entire food industry," said TAG Owner and Former FDA Associate Commissioner of Foods David Acheson. "Intended to expedite traceability to enhance USDA's ability to investigate outbreaks and identify source

materials, it is one more example of the importance the federal food safety agencies are placing on recordkeeping."

When the fact that food chain transparency is being driven by consumers is added to this, it results in a confluence of consumer, retail, and government demand that has pushed the envelope for the food industry, eliciting new-age technological applications of IoT for data gathering and analysis.

It is a world of hyper-connectivity by which "humanity will change more in the next 20 years than in the previous 300," predicted Futurist and Author Gerd Leonhard. "Anything that can be automated will be automated," he said. "Business as usual is dead, and food is next. A fundamental transformation of today's global food system is imminent."

This is being seen in areas such as SMART farming, collaborative robots (cobots), and even the development of "clean" meats using no animal products.

IoT IN PEST CONTROL. With such extensive technological developments, it's no surprise that IoT is seeping into pest management. One of the most significant developments is the digital rodent monitoring system (RMS) which alerts pest management professionals to the trap-capture of a rodent. The real-time alerts enable

rapid response, and the aggregation of data provides a deeper understanding of rodent presence and activity, enabling the implementation of preventive controls.

In a case study report, *Remote Monitoring for Rodent Control*, McCloud Services Technical Director Patricia Hottel discussed how these systems enable the opportunity to investigate equipment at time of capture instead of on the weekly basis of most conventional programs. "We increase our ability to reduce food safety risks with a faster response time and the increased ability to modify our action plan in a more timely manner," she said. "It promises to increase our knowledge of basic rodent behavior and the root causes of rodent problems in our sites."

"The majority of QA managers and auditors are hungry for more information," said Bayer Digital Pest Management Sales and Business Lead Scott Broaddus. "System-generated trend reporting helps pest management professionals provide more tailored information, helping improve their customers' audit readiness and compliance."

System data about frequent rodent movements also can enable the redesign of trap placement schemes for greater efficacy, Broaddus added. "These new insights allow for enhanced transparency and program refinement to ensure customers receive the most optimized rodent control program." 🌱



Why NOW?

With rodent control on the cusp of a new era, forward-thinking pest management professionals are turning to rodent monitoring systems to provide increased value and service to food processing facilities.

- Currently, most pest management companies serving the food industry travel site to site, routinely checking each rodent trap for a capture. This lengthy, laborious process leaves limited time to make thorough and proper inspections of conditions throughout the facility.
- Most pest management and facility management teams are unable to record real-time mice activity with enough accuracy to strengthen their rodent control system beyond its current level.
- Even now, rodent trapping devices are still purely mechanical. The two basic functions, trap and kill, have remained the same for more than 100 years. Without a connected monitoring system, rodents are often not discovered until the pest control technician arrives on site and makes a visual inspection of the trap. Therefore, the ability to quickly identify, control and correct infestations is reduced. The exact time of a possible infestation, capture or source of rodent activity is often unknown.
- In September 2015, FDA issued the final rule on Preventive Control for Human Foods as part of FSMA. The goal of the rule is to safeguard the U.S. food supply by shifting focus from reacting to contamination to proactively preventing it. FSMA requires more frequent prevention-oriented inspections of food processing and handling facilities to identify and protect against potential food safety hazards. ⊕



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The RMS provides real-time information quickly and accurately, so when a capture is made, PMPs know immediately.

Time for **A CHANGE**

T Bayer Rodent Monitoring System (RMS) can help pest management companies and food processing and handling facilities partner to implement a more effective rodent control management plan in response to these regulations. Using the Bayer RMS with appropriate data analysis and implementing timely corrective actions will help reduce the likelihood of rodent-induced food contamination, enhancing the rodent control program's efficacy. While the Bayer RMS improves the efficiency and accuracy of rodent control, effective implementation (including corrective actions if needed) within facilities and collaboration with pest management companies are critical to achieve successful pest management and regulatory compliance.

What is the Bayer Rodent Monitoring System?

The Bayer Rodent Monitoring System (RMS) is a distributed sensor network designed to provide 24/7 monitoring of rodent activity. Its primary function is to instantly alert the pest management company of a rodent capture in a multi-catch or snap trap. The Food Safety Modernization Act (FSMA) and the Global Food Safety Initiative (GFSI) certifications have become industry standards. Therefore, pest management for the food industry must align itself with these standards to enable a safe food supply chain. The RMS provides a reliable and convenient solution helping pest management companies become more valuable partners to the food industry.



How BAYER Partners with Customers

Prior to the installation of Bayer’s Rodent Monitoring System, it is recommended that all stakeholders discuss and agree upon the responsibilities of each party. Suggested guidance for this discussion of responsibilities is listed in Table 1 (at right).

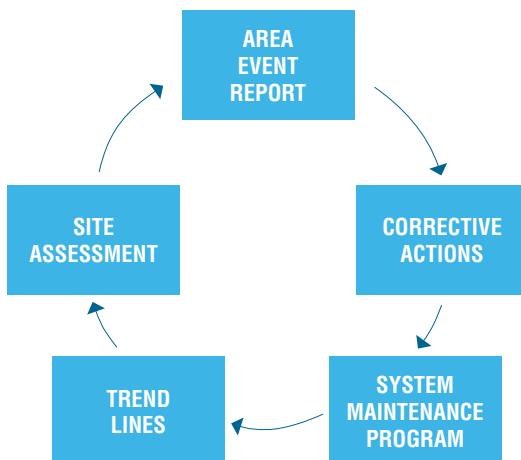
Note, however, that the guidance is provided only as a general suggestion. Exact responsibilities may vary by facility and should be determined by the needs, preferences and any applicable legal agreements between the parties.

The general process flow, as supported by the Bayer RMS, is presented in Figure 1 (below).

TABLE 1. GUIDANCE FOR THE RESPONSIBILITIES OF RODENT CONTROL SUPPORTED BY THE BAYER RMS

PARTY	RESPONSIBILITIES
Bayer	<ul style="list-style-type: none"> • Support service provider for site assessment and installation • Provide 24/7 monitoring and capture alerts • Provide pest management professionals with Area Event Report and trend line reporting • Provide detailed digital maps showing the location and status of each monitor
Pest Management Company	<ul style="list-style-type: none"> • Provide agreed-on service plan • Provide pest control service • Respond to notifications; take corrective actions • Implement System Maintenance Program
Facility Management	<ul style="list-style-type: none"> • Respond to notification alerts as needed • Maintain good sanitation practices; inspect incoming materials • Review and verify pest management service • Take corrective actions including work order for facility maintenance

FIGURE 1. RODENT CONTROL PROCESS FLOW SUPPORTED BY THE BAYER RMS





GFSI COMPLIANCE and Supplier Audits

How Does the RMS Support GFSI Compliance and Help Navigate Supplier Audit Programs?

The Supplier Audit Program (namely Second-Party Audit) verifies that suppliers meet their customers' expectations in product safety and quality, facility environment. Food manufacturers, distributors, brokers, and retailers should use their audit programs to ensure that controls are consistent with internal and external standards. The intention of the supplier audit program is not to set disciplines; rather, it is to improve the overall quality system throughout the supply chain, thus leading to a more efficient product sourcing and purchasing process. The expectations for pest management programs that apply to rodent control are briefly summarized as:

- Written pest management plans.

- Inspection procedures and frequencies for plant infrastructure, pests, and all pest devices that demonstrate control.
- Required documentation of a pest activity log and analysis of records for trends in activity.
- Documented corrective actions.
- Training requirements.
- Licensed pest control operators.
- A dated map showing the location of pest control devices, such as interior rodent traps, glue boards, insect light traps, outdoor bait stations, and pheromone traps.

The Bayer RMS can help facilities meet the rising expectations demanded by sup-

plier audit programs. Additionally, the Bayer RMS can help companies improve the traceability and visibility of a product recall, minimize loss of the recall, and quickly determine the root cause of any potential rodent infestation.

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TABLE 2. RODENT CONTROL PRACTICE SUPPORTED BY RMS FOR GFSI COMPLIANCE

GFSI SCHEME REQUIREMENTS	BAYER RMS
General Requirements	The installation of monitors is based on a detailed site assessment (including business type, risk assessment, and pest activity). Further, the system can generate trend lines periodically to advise monitor placement schemes and inspection frequency.
Documentation	Bayer RMS maintains time-stamped records of all messages from the monitor(s) (e.g., movement, capture, heartbeat, last time inspected, etc.). The records can be retrieved for documentation purposes.
Specifications	Device specifications are provided by Bayer.
Corrective Action	The PCO or QA manager can respond to capture messages or movements of the monitors as needed to protect product safety. Real-time alerts enable more timely corrective actions.
General GMPs PRPs	From the outset, Bayer RMS identifies rodent activity in different control areas. This information can be used to perform a hazard analysis to reduce or prevent infestation.
Pest Control	<ul style="list-style-type: none"> • Are licensed service providers • Provide detailed site assessment • Provide data analysis and trend lines to review the effectiveness of current program • Enhance IPM by reducing conducive conditions for infestation by enabling additional preventive measures such as excluding pest access and removing harborage



Rodent
Monitoring System

A GAME-CHANGING STRATEGY IN FOOD SAFETY.

The Bayer Rodent Monitoring System is a network of high-tech sensors that provides 24/7 monitoring, real-time capture alerts and up-to-the-minute rodent program verification to help you defend your facility and safeguard the public health.

The Bayer Rodent Monitoring System helps:

- // *Improve audit readiness and compliance*
- // *Promote proactive IPM inspection*
- // *Enable rapid corrective and preventive actions*

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