



# STATE OF THE COCKROACH CONTROL MARKET

From types of cockroaches to where they're being spotted, *here's how food facilities are handling the pest now.*

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**Cockroaches are a public enemy for food and beverage processors, but there are proactive ways to identify and mitigate what could be a devastating business problem.**

The Big Three that food processing facilities do not want to invite into their operations are flies, rodents and cockroaches, which, by nature, introduce filth and the potential for disease. It's already in their bloodstreams.

"Cockroaches are competent vectors of disease by mechanically transferring unwanted pathogens from where they live," said Dan Collins, noting that FDA and health departments recognize them as a threat to public health. Collins is president of Independent Pest Management Consulting in Evansville, Ind., and he works with food and beverage facilities to develop and implement pest management systems.

When cockroaches are present, companies in this industry have a real problem. Collins describes a case when a facility nearly lost a \$50 million deal because the customer visited and found cockroaches present. "We spent three weeks crawling through every part of the facility and we got them under con-

trol, but we worked our tails off," he said. "You can lose lots of business, get shut down, fail a third-party audit and land on the news with mud on your face. It's a publicity nightmare."

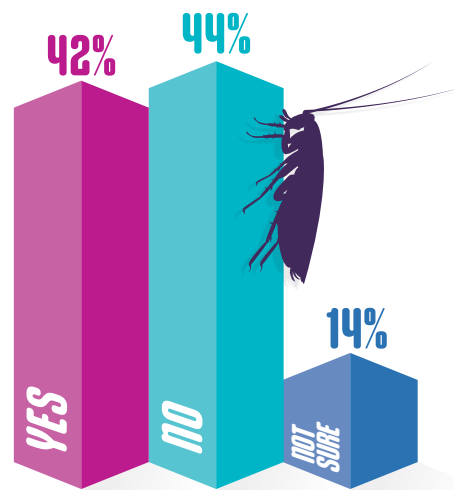
While 97 percent of respondents to QA magazine's annual State of the Cockroach Market survey feel their facility's cockroach control programs are successful, 42 percent said they have seen a roach inside or outside of their facility.

One leads to many more, along with a dirty problem to deal with. "They're not like other animals like raccoons that will wash their hands before they eat," said Scott Green, an associate certified entomologist and technical service manager for Rentokil Terminix. "Cockroaches don't care. They like to reside in filth areas because it's where other humans or predators will not go to find a food source."

Green said cockroaches are opportunistic and problematic from a health standpoint because of their own habits and where they come from.

## Seeing is Believing

**Have you, or has anyone at your food/beverage facility, ever seen a cockroach inside or around the exterior of your facility?**



Source: Readex Research; Respondents: 108

## ABOUT THE SURVEY

Quality Assurance & Food Safety magazine's 2023 State of the Market: Cockroach Control in Food Facilities survey was sponsored by Zoëcon and compiled by Readex Research, a privately held research firm based in Stillwater, Minn. The sample of food and beverage processing facility managers and executives was systematically selected from the circulation file of QA. Data was collected from 216 recipients of QA's digital magazine and/or e-newsletter at unique U.S. company locations. Of these, 108 work for a company with at least one food/beverage facility in which pest control is conducted and are the basis of this report. The margin of error for percentages is plus or minus 9.4 percentage points at the 95% confidence level. Charts may not add up to 100% due to rounding or the ability to select multiple responses.

The key for food and beverage processors is to identify harborage hot spots, eliminate conducive conditions and partner with a pest professional to monitor, control and prevent cockroach pressure.

“Food production facilities should not accept any cockroaches into their facilities,” Collins said. “It’s not acceptable.”

**Harborage Hot Spots.** Cracks and crevices, wet wash areas, employee lockers and break rooms — these are some common “hangouts” for cockroaches. “The main things to look for are wood, water and warmth,” Collins said, calling those conditions “The Three Ws.”

A company’s sanitary procedures can actually invite cockroaches to nest. For example, wet wash facilities that use high-pressure water and steam to clean floors, walls and other surfaces usher food into hard-to-reach or inaccessible areas.

Collins describes a potential scenario at a dairy facility. “They do a heavy wash and there’s a crack in the floor or up against a wall, and they end up pushing that residue into a perfect void for cockroaches to develop,” he said.

One bakery he serviced had a production line where product dropped about 10 inches from the oven outlet to a conveyor system. “You can imagine the debris coming off of that,” Collins said, adding that a system retrofit solved the issue.

Intercompany transfers of equipment and materials are also an entry point and often overlooked. “For example, you are taking an oven from a bakery in Indianapolis to the location in Chicago. One has a cockroach problem and the other doesn’t,” Collins said. You know what happens next.

Catch basins, grease traps and drains are other appealing places for cockroaches to develop. Green points out another unexpected hot spot: appliance insulation. Deliveries of ingredients and products also can drop off unwanted pests.

How cockroaches enter depends on the type, too. American cockroaches tend to stay outdoors, though they can work their way inside. “American cockroaches typically come in through sewer systems, water systems or steam tunnels — through utilities,” Collins said. “They are

more mobile than German cockroaches and can come in from 100 feet away.”

German cockroaches tend to travel no farther than 10 to 15 feet. “They are typically introduced via workers,” Collins said. Respondents to the QA survey indicated that employee belongings (27 percent) and food/ingredient deliveries (23 percent) were ways cockroaches enter. Thirty-three percent suspected cockroaches come from the outside, and only 7 percent said non-food deliveries were a culprit.

Especially now, with labor shortages and more temporary employees, Collins sees lax uniform policies and the transient nature of the workforce as reasons why cockroaches are more likely to come in. “Companies are allowing personal items on production floors,” he said.

Building design also comes into play. Newer food plants are constructed with “sanitary design,” Collins said. “They are able to design equipment that is elevated off of the ground, and there are not a lot of seams and crevices where cockroaches can get inside equipment. In older facilities, we have to look at how to seal up harborage points.”

**Awareness & Strategy.** To find areas where these pests live, “You have to think like a cockroach,” Collins said.

A thorough risk assessment of a facility can uncover conducive conditions. An

assessment should identify the facility’s age, construction materials, master cleaning schedule, employee practices (uniform policies, etc.) and building design, among other factors like utilities and sewers.

“What is the root cause?” Collins said. Then, monitoring systems can help reveal high-pressure areas so pest management efforts can be focused on those spots. Collins likens it to fishing. “I only fish about 10 percent of the lake, because that is where the fish are,” he said.

Monitors should be labeled and mapped out and data gathered to identify trends. In partnership with a pest management professional, food and beverage facilities can develop and implement a comprehensive program.

Already, most work with an outside specialist — 65 percent of survey respondents rely on a pest control company for control, 6 percent assign the responsibility to an in-house department and 30 percent rely on both.

Awareness is imperative, Green added. He notices more attention and understanding toward pest management in the food and beverage industry than a decade ago. “Especially on the QA side, we are seeing them monitoring on their own and keeping trending reports to use as a comparison point,” he said, relating that this information can help guide pest management professionals’ visits. “If anything, it makes us better and more accurate.” ▲



## Getting In

What do you think is the most common way that cockroaches enter food/beverage facilities?



Other 6% | No answer 2%

Source: Readex Research; Respondents: 108

# OUT OF CONTROL

## Why aren't your cockroach mitigation efforts working?

You partner with a professional who manages pest control operations and visits the site frequently. Sanitary procedures are in place, and you train your people. Baits are strategically placed; the traps are out and residuals are applied.

But somehow, you're still finding cockroaches. What's the deal? Why aren't the control methods working?

"The No. 1 reason for failure is when I hear, 'We didn't think it was a serious issue,' and then it quietly bubbles in the background, and the next thing you know, it's like, 'Where are all these cockroaches coming from?'" said Dan Collins, president, Independent Pest Management Consulting, Evansville, Ind.

QA magazine's annual State of the Cockroach Market survey showed that facilities realize that cockroach control is imperative. None of the respondents said they would "ignore it" if they saw a single cockroach in the facility. In 2023, the vast majority will maintain their existing pest control program, with 9 percent increasing it somewhat and 2 percent upping the ante significantly.

The reality is, managing a persnickety pest that hides out in sometimes completely inaccessible areas is no easy feat.

**Assess Pest Risks.** "If you have an established population of cockroaches or any pest, you'll be behind the eight ball the whole time if you do not have a good risk assessment before you start service," Collins advised. Job No. 1 is to find out why cockroaches are showing up at your facility through rigorous inspections, followed by monitoring and data capture. If you build the treatment program without these steps, you are likely missing some harborage hot spots.

**Open the Lines of Communication.** In large corporate environments, sometimes the message of a cockroach sighting or the need to address environmental or infrastructural factors does not travel up the ladder fast enough or to the right people, said Scott Green, an associate certified entomologist and technical service manager for Rentokil Terminix. "Having leadership 'all in' on your pest program is essential to getting it right."

**Evaluate Equipment.** Equipment that does not allow for cleaning underneath and around it might be hiding crevices and entry points into floors, walls or the machines themselves. In wet wash procedures, food and beverage residue can get pushed into cavities. Common oversights include: appliance insulation, oven inlets and outlets, wall voids behind sinks, oven lines and dish washing areas, electrical junction boxes and seams in equipment.

**Investigate Employee Areas.** Workers commonly bring in German cockroaches, which travel into facilities on clothing and inside bags with personal belongings. A strict uniform policy and locker/storage procedures are the best way to reduce the likelihood of cockroach entry, Collins said. Ideally, a food and beverage processing facility provides uniforms that are professionally laundered following every shift. Lockers and street clothes stored within them should be inspected. Provide contained storage for food — lunch bags and coolers. Collins points out, "The German cockroach is almost wholly dependent on us to get transferred inside facilities." ▲



## Top Cockroach Spots

Where at your facility were the cockroach(es) discovered?

employee break room and kitchen.....	58%
in and around employee lockers.....	27%
outside facilities.....	22%
around drains.....	20%
around garbage bins.....	16%
on incoming goods.....	16%
in and around storage areas and pallets.....	16%
in the processing area.....	13%

Source: Readex Research; Respondents: 108; multiple answers

# IN, OUT AND ALL AROUND

Cover your interior and exterior cockroach control bases.

A cockroach control plan should address the pest inside and out. But the first step is to identify which type of the species is entering the grounds, because behaviors of the two top offenders are quite different. American cockroaches mostly live outdoors and are more avid “travelers,” while German cockroaches are indoor pests that find their way into facilities mostly by hitching a ride — from an employee or a delivery, for example.

You probably won’t find German cockroaches outdoors. But American and Oriental cockroaches that thrive outdoors can enter facilities through utility lines, sewers and infrastructural crevices. Because of this, interior pest control is a must. You also have to look around the building, said Scott Green, an associate certified entomologist and technical service manager for Rentokil Terminix.

**Outside.** “Get a good handle on landscaping, making sure leaf debris is properly taken away at a regular cadence,” Green said. Dispose of garbage in a timely manner.

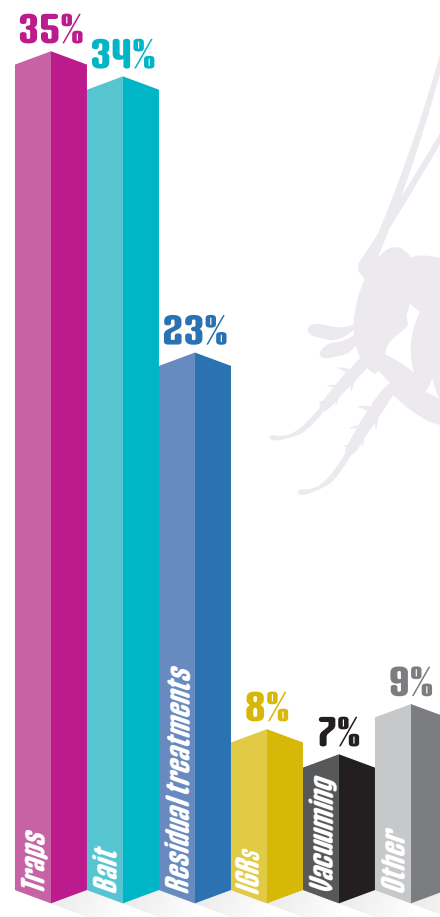
An “arbitrary perimeter treatment” isn’t going to kick out cockroaches, said Dan Collins, president, Independent Pest Management Consulting in Evansville, Ind. “Treat the areas where cockroaches are living, particularly if a municipality will let you treat sanitary sewers and associated catch basins.” If treating those spaces is off-limits, put in place one-way drain valves.

**Inside.** A range of indoor controls can help manage a cockroach problem and prevent them from entering. Baits are highly effective, Collins said, and the No. 2 method of control by food and beverage processors who responded to QA magazine’s State of the Cockroach Market survey. Thirty-four percent use baits inside and 35 percent set out traps. Close behind this comes residual treatments at 23 percent. IGRs (8 percent) and vacuuming (7 percent) followed those. Most use multiple control methods.

Without exclusion efforts and sanitation protocols inside and out, you’re fighting a losing battle. Above all, “You need a very strong relationship with your pest control provider,” Collins said. “That person needs to be seeking out and finding cockroaches and explaining why the facility has them. And, you need to be trained to find them and have a strong self-inspection in place inside the plant.” ▲

## Control Group

What types of cockroach control have been used inside your facility?



Source: Readex Research;  
Respondents: 108; multiple answers

# LAYERS OF CONTROL



## A STRATEGIC APPROACH

**Any effective pest prevention plan begins with a thorough site assessment to identify the root cause.**

“Everyone wants to know, ‘What do we spray? What do we treat? What do we do?’ but the first thing you need to ask is, ‘Why is the cockroach there?’” said Dan Collins, president, Independent Pest Management Consulting in Evansville, Ind.

Collins advises food and beverage processing clients to conduct a site risk assessment first. Based on this information, create inspection points and then develop a treatment process for those areas.

It’s really a game of connect the dots.

“Say an oven has a history of German cockroaches inside the inlet and outlet, and this is very common,” Collins said, pointing to the high heat, humidity and presence of food as an appealing environment. “So, you make that oven an inspection point. Then when the PMP comes in, he can scan that bar code and acknowledge an inspection took place.”

Mapping inspection points and tracking captures at each will help guide a cockroach treatment program. “You

have to be systematic in everything you do, and there needs to be an understanding on both sides that this is not a pest control issue or a food plant issue, it’s an ‘our’ issue,” Collins said. “It’s all of our jobs to make sure that cockroaches are not invited into the facility.”

**Stopping Pest Entry.** A site assessment also guides exclusion efforts — crevices that need sealing, production line “gaps” that require re-engineering, employee policies that demand improvement.

Collins points to the frequency of employees introducing cockroaches that ride into lockers and break rooms on backpacks, clothing and lunch containers.

He recommends a captured uniform policy, meaning street clothes are stored in lockers and professionally laundered uniforms are worn on the floor. Assigned lockers should be cleaned and inspected at least monthly. Another option is to install metal shelving without harborage points on walls. Employees can store lunches and personal belongings there.

Refrigerators should be cleaned weekly.

If cockroaches are entering from the exterior through water or sewer lines, consider a one-way drain valve. If sanitation is lagging, revisiting procedures and introducing bioremediation can go a long way, said Scott Green, an associate certified entomologist and technical service manager for Rentokil Terminix. “Bioremediation has changed the game to mitigate pest problems in drains, sinks and sewer areas,” Green said.

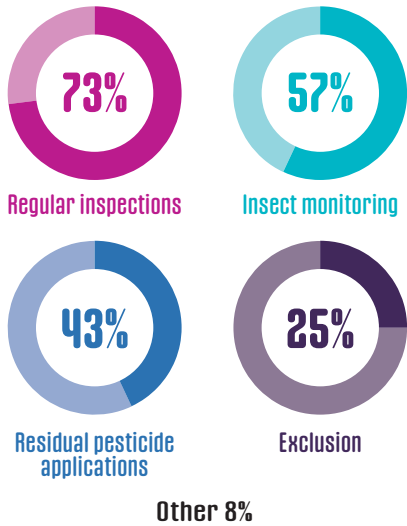
Again, addressing risk areas identified on a site assessment is the first step to managing cockroaches. Collins said, “You have to eliminate those conditions.”

**Multi-Pronged Control.** A layered, integrated pest management (IPM) approach involves a combination of exclusion, monitoring, sanitation, baiting and use of other products like insect growth regulators (IGRs) and residual treatments.

QA survey respondents identified regular inspections as the most important

## Prevention Practices

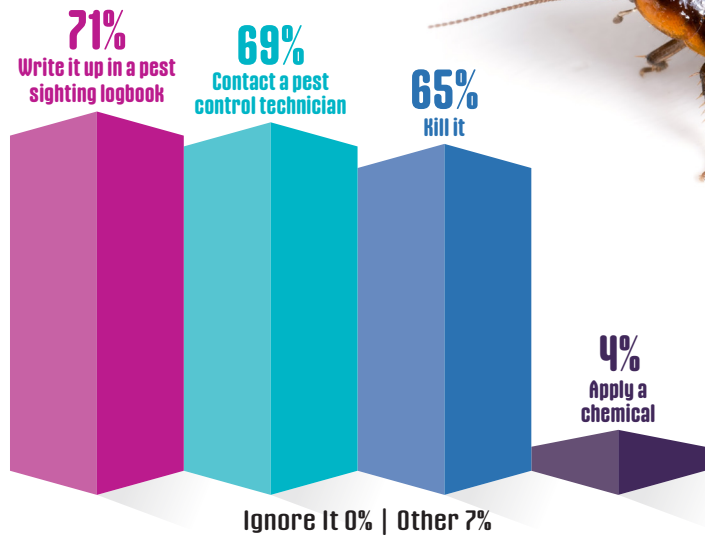
What does your facility do for cockroach prevention?



Source: Readex Research;  
Respondents: 108; multiple answers

## What Would You Do?

What would you (or a co-worker) do if you saw a single cockroach at your facility?



Source: Readex Research; Respondents: 108; multiple answers



aspect of cockroach control (73 percent). Following that was insect monitoring at 57 percent and residential pesticide applications, 43 percent. Seventy-four percent have implemented an IPM program.

Treatment depends on the location inside or outside of the facility. "You might not be able to bait an area because it is a food-contact surface," Collins said, pointing to the intricacies of developing a pest management program for food and beverage companies. Sometimes, a shut-down is necessary to perform spot applications with contact or flushing insecticides, followed by cleaning surfaces.

"Baits are an effective control," Collins said, suggesting that baits be rotated. "Ants will eat any bait there is. But German cockroaches are more finicky."

IGRs that disrupt the cockroach development cycle can be applied in susceptible areas. They are ideal for electrical panels where cockroaches can nest.

Green urges companies to place monitors even in areas you believe are not at risk. "If you are not monitoring an area

because you think it's safe, prove it," he said. "Keeping a monitor there is better than having the health department find something. Early detection is the key."

Collins added: "Monitors should be mapped and numbered, then checked on an agreed-upon interval, and captures need to be trended. So, if you have four ovens or three milk tanks, you have to know where you are catching cockroaches. That allows you to ask, 'Why am I catching them in this spot?' and identify something you are overlooking or a process that is not effective."

Consistent monitoring and inspection go a long way toward preventing an infestation of any kind. A monthly program might not be enough. "German cockroaches reproduce every 21 to 28 days," Green pointed out. "So, if you don't catch the problem sooner [that could be bad]."

Food manufacturers usually adhere to at least a bi-weekly program and often weekly. A plan must be reviewed and evaluated, too. Pressure points can change. For instance, Green notes how a

food production facility had to institute a policy requiring employees to bring belongings in clear plastic bags to reduce the likelihood of introducing pests.

Also important is understanding the pest management protocol at suppliers' facilities. "A delivery of cardboard boxes filled with No. 10 cans can bring in a problem," Green said.

And employees should understand the importance of these practices and how to respond if they spot a pest. For instance, 71 percent of QA survey respondents said they would write up a cockroach sighting in a dedicated logbook. Sixty-nine percent would contact a pest control technician. Employees are often the eyes and ears, with 88 percent noting that sightings are how cockroach presence is determined in a facility.

Collaboration is the main ingredient in an effective pest management program. Green said, "Having a good relationship with your pest control provider so you can talk to the right people when these problems occur is essential." ▲

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