



*State of the*  
**Cockroach**  
**Market**

**In This REPORT:**

Exclusive Market Research  
Cockroach Trends & Treatment Tips  
Managing Peridomestic Species  
Preventing Callbacks  
Preferred Formulations

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## Greetings from Syngenta,

**C**ockroaches have been around for more than 300 million years and, based on their persistence, they are not going away anytime soon. They are some of the most prevalent pests in urban environments and bring in valuable revenue for our pest management industry. In fact, 97 percent of Pest Management Professionals (PMPs) surveyed for this 2016 State of the Cockroach Market report believe that revenue generated from cockroach-related service calls will remain constant or increase for their businesses in the years to come.

As a company committed to providing you with advanced cockroach control resources and support, Syngenta is proud to sponsor this year's State of the Cockroach Market report. Within these pages, you can see the latest numbers and reports about the industry's cockroach treatment protocols, marketing efforts, techniques for managing aversion and more. You can also read about real-world stories from other PMPs to gain useful insights that can be applied to your business.



Major cockroach species tend to be synanthropic (they live with humans) and exhibit other behaviors that allow them to thrive in urban environments. This often makes them challenging to control, and issues like bait resistance and aversion can only make your jobs more difficult. These are just a few reasons why Syngenta supports an Integrated Pest Management (IPM) approach for combating cockroaches. We are proud to offer proven formulations to aid your IPM efforts, such as Advion® Cockroach gel bait, Arilon® insecticide and Tandem® insecticide. Research and discovery of new chemistries are also paramount in the fight against cockroaches, and we continue to search for and develop new products to help enable your continued success on the frontlines of our industry.

Cockroaches can seem like a daunting enemy, but we're confident you can take on the challenge. To give you the tools you need, we will continue to provide information and new solutions to help ensure success for your business and peace of mind for your customers.

### **Chris Keefer**

Technical Services Representative  
Syngenta Professional Pest Management

For more information, visit [www.SyngentaPMP.com](http://www.SyngentaPMP.com).



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Highlights from the **PCT State of the Cockroach Market** report, as well as insights from PMPs across the nation on how they are approaching the management of this pervasive pest.

# Man vs. Cockroach Who's Winning the Battle?

**W**hen David Hersh started working in pest management in the 1970s, the United States Environmental Protection Agency (EPA) had just been formed, and pesticides were under tremendous scrutiny. Some, like DDT, were banned. PMPs found themselves needing to become more creative in their approach to managing these relentless pests, and, according to Hersh, “The cockroaches were winning.”

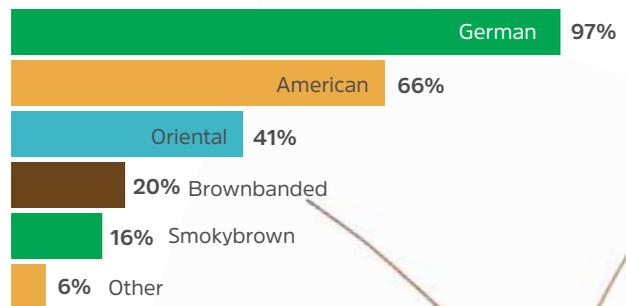
The momentum shifted with the advent of cockroach baits in the late 1980s, Hersh continues, as PMPs gained the upper hand in the ongoing battle. Today he feels that grip slipping just a bit.

“Cockroaches are becoming more prevalent and more widely spread, particularly in restaurants and homes. We need to think very strategically about how we’re approaching treatment,” he says.

Nationwide, PMPs seem to have those strategies covered, as PCT’s State of the Cockroach Market report reveals that they place far fewer species of cockroach in the “problematic” category. Conversations with PMPs confirm that they feel confident they have the tools and know-how required to gain control and claim victory over most, if not all, cockroach species.

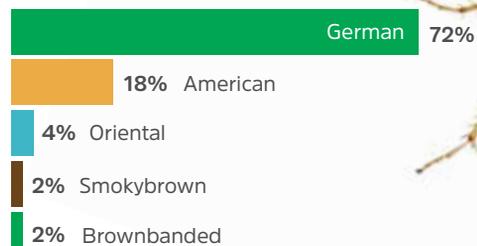
Following are highlights from the PCT State of the Cockroach Market report, as well as insights from PMPs across the nation on how they are approaching the management of this pest.

## What cockroach species tend to be problematic in your market area?



Number of responses: 332

## What cockroach species represented the largest percentage of your location’s service calls in 2015?



Number of responses: 332

Source: State of the Cockroach Control Market Survey



### MOST PROBLEMATIC SPECIES

Of the top five “problematic” cockroach species, only German cockroaches are causing more concern than they did last year — and by only a smidgen. They already held the crown high above other species’ heads with 96 percent of respondents dubbing them problematic last year; this year, they edge even closer to omnipresence, at 97 percent.

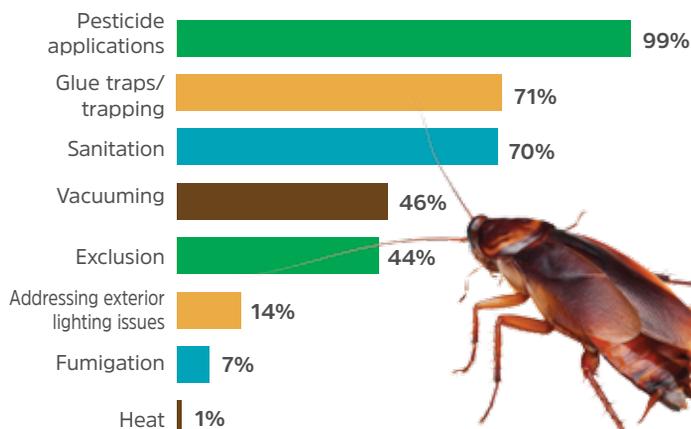
However, American, Oriental, brown-banded and smokybrown cockroaches fell an average of 6 percent in terms of being considered problematic — an indication of PMPs’ confidence in keeping these species under control. Americans, for example, which rank second in this category, are considered problematic by only 66 percent of PMPs surveyed, down from 72 percent in 2015.

Smokybrowns are down to just 16 percent, compared to 22 percent in 2015.

The story is slightly different when PMPs report which species represents the largest percentage of service calls. In this area, German cockroaches are losing ground (72 percent, compared to 78 percent in 2015), while American (18 percent, compared to 16 percent in 2015) and Oriental (up to 4 percent,

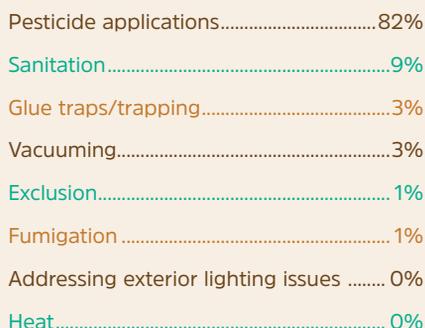
## Treatment Protocols By The Numbers

What types of control measures does your location use to manage cockroaches in homes and/or businesses?

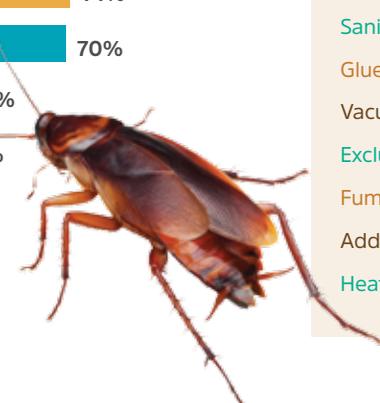


Number of responses: 332

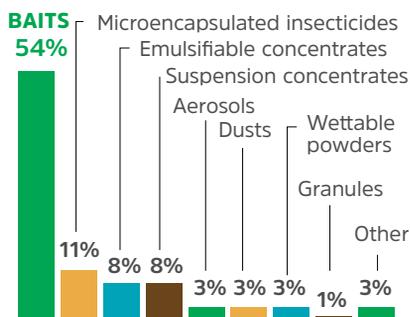
What is your location’s primary control measure for managing cockroaches in homes and/or businesses?



Number of responses: 332

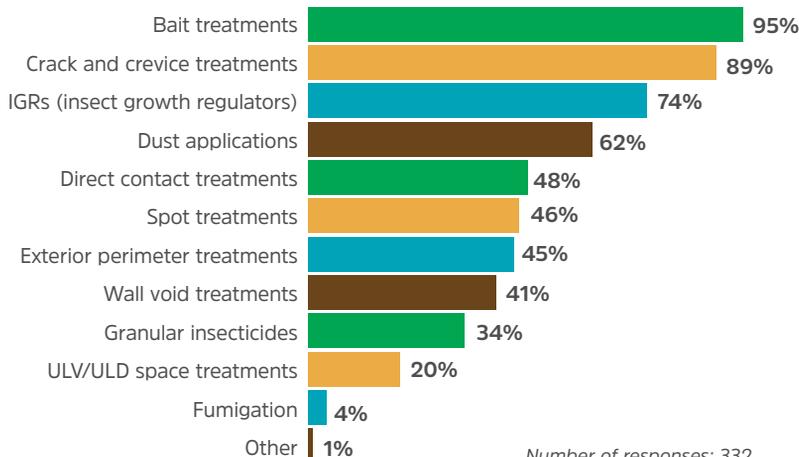


What is your location’s preferred formulation of pesticide applications for cockroach control?



Number of responses: 328

What types of pesticide applications are part of your location’s cockroach control protocol?



Number of responses: 332

# The Business of Cockroach Control

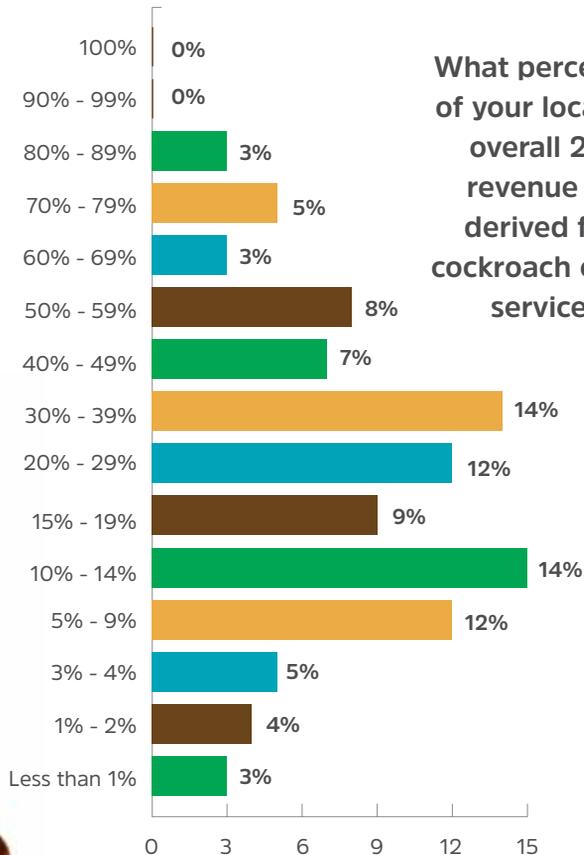
For what types of accounts does your location offer cockroach control services?

Apartments and multi-family housing...	83%
Restaurants and food service facilities.....	79%
Healthcare facilities.....	51%
Schools and daycare centers .....	45%
Hospitality accounts (hotels, motels, etc.) .....	43%
Food warehouses and distribution centers .....	42%
Government facilities .....	33%
Modes of transportation (planes, trains, buses, etc.) .....	15%

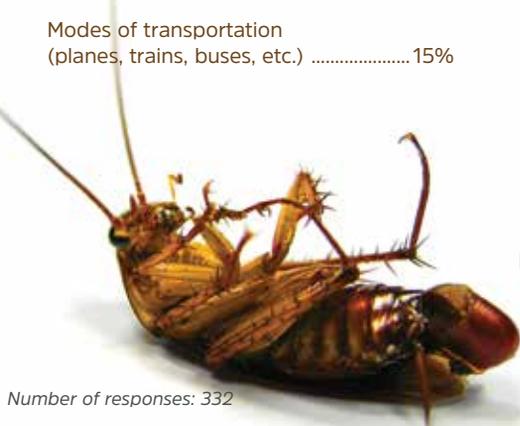


Single-family homes  
**93%**

What percentage of your location's overall 2015 revenue was derived from cockroach control services?



Number of responses: 332



Number of responses: 332

## Service Calls On the Rise

Over the past year, have your location's cockroach-related service calls increased, decreased, or remained the same?



Number of responses: 332

In the past three years has the percentage of your location's revenue generated from its cockroach control services increased, decreased, or remained the same?



Number of responses: 332

Compared with 2015, do you anticipate the percentage of your location's revenue generated from its cockroach control services to increase, decrease, or remain the same in 2016?



Number of responses: 332

compared to last year's 1 percent) cockroaches are gaining.

In fact, anecdotally, many PMPs report a notable uptick in American cockroach pressure over the past couple of years. Lisa Julien of N Texas Pest Control says that Americans have been surging in the Dallas-Fort Worth region in spring and fall, while Bill Haynes of Haynes Exterminating says that Georgia is getting hit in the summer.

"We've received many more calls for American cockroaches the past two or three years, particularly in the hottest months of the year," says Haynes. "The increase in rain probably has something to do with it. The infestations aren't any worse or harder to manage than in the past; they're just more numerous."

## BUSINESS CONSIDERATIONS

From a revenue perspective, the cockroach story is a positive one. While only 2 percent of PMPs saw an increase in the number of calls last year, nearly a fifth (19 percent) say that cockroach work accounted for half or more of their 2015 revenues — a 5 percent increase over the previous year. Respondents shared that, on average, 28.4 percent of their 2015 revenues were for cockroach services; that's 3.3 percent higher than last year's average.

In fact, 36 percent of PMPs report that their cockroach revenues have increased over the past three years. Optimism is high for cockroach work in 2016, too, as 41 percent expect it to account for a larger percentage of their revenues.

Hersh looks for a potential lift in cockroach revenues for local PMPs in the grocery and restaurant segments. Over the years, he has watched Hersh Exterminating's earliest customers, Ohio- and Pennsylvania-based independent grocers and restaurateurs, give way to large chains. Pest management decisions became centralized at the national level, cutting many local PMPs out of the picture. Hersh expects to see this scenario come full circle, as decisions made

through corporate headquarters fail to bring about the desired results.

"When national decision makers are unable to resolve the pest issues of their individual locations, they often empower local decision-makers to address their own cockroach problems," Hersh explains. "This shift back to local decision-making could open up new opportunities for independent operations like ours."

Hersh is in good company in servicing restaurants and grocery stores. PCT readers offer cockroach management services in a variety of commercial and residential settings. They report servicing more healthcare and government facilities, hospitality accounts, food warehouses and distribution centers, restaurants and transportation vehicles (planes, trains, buses, etc.) than last year, with servicing of single- and multi-unit homes remaining relatively flat.

## TREATMENT PROTOCOLS

There were no surprises in PMP reports of how they're treating cockroaches. Pesticides are being used by 99 percent (with 82 percent identifying pesticides as their primary control measure), glue traps by 71 percent, sanitation by 70 percent, vacuuming by 46 percent and exclusion by 44 percent. Most use an IPM approach that includes some combination of these methods.

In terms of pesticide applications, 95 percent of PMPs say they use baits. Crack-and-crevice treatments (89 percent), IGRs (74 percent) and dust applications (62 percent) are widely used as well.

Of course, the type of cockroach influences the treatment approach. Haynes, for example, uses a combination of baits, IGRs, vacuuming and sanitation in his IPM program for German cockroaches. When he's treating Americans, he uses granules outdoors, dusts in wall voids and baits in wide-open areas.

Julien, who primarily uses baits, IGRs and dust, plus the occasional liquid for

knockdown, believes that PMPs' strongest tool is a thorough inspection. Arnold Katz of Graduate Pest Control in New York City agrees.

"It's not just the inspection, but the imagination you put behind the inspection that gives you the edge," he explains. "It's important to look at things from alternate vantage points. If you feel that you're always looking to the right, look left. If you've been looking at things from eye level, stand on a chair or get on your hands and knees to see things differently. If you're not bending down, climbing up or looking in different places, you're going to miss a lot."

Katz, whose specialty is Safe Quality Food (SQF) inspections, is among those who rely on exclusion to do the bulk of cockroach control work. He uses caulk or cement to keep German cockroaches out of establishments, and counts on vacuuming and steam cleaning to knock populations down. He thoughtfully applies pesticides, mainly in wall and floor voids, which he often accesses by drilling. When called to treat infestations of American cockroaches, which proliferate in New York City's sewers, he looks for access points and screens or cements them off.

Fellow New Yorker Chris Crone of CNJ Pest Management agrees that exclusion is the first step in gaining control over cockroaches. He believes strongly in monitoring with glue traps and pheromones to prevent major infestations from taking hold. He also makes sure he communicates with his customers on sanitation requirements.

"I explain to the property manager — and directly to tenants when I can — that they need to remove competing food sources and minimize potential harborage spots," says Crone. "This education, coupled with my exclusion work, helps us achieve an optimal environment where we can gain control through a minimal

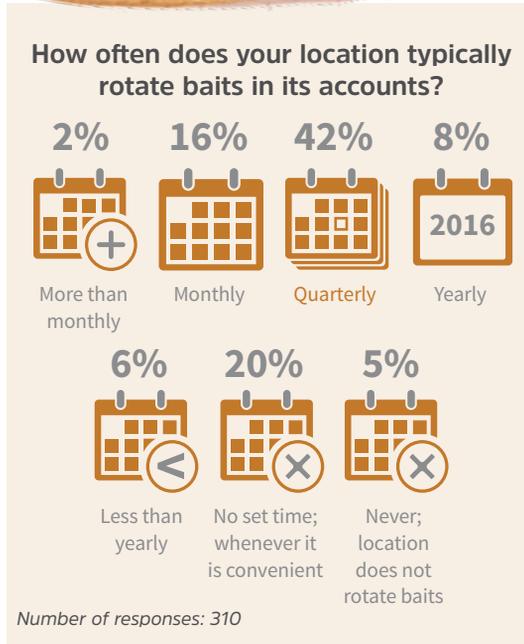




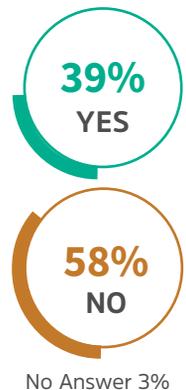
amount of pesticide applied as infrequently as possible.”

The pesticides Crone does use tend to be gel baits in combination IGRs. He doesn't feel the need to rotate baits very often because he hasn't experienced bait aversion or resistance. Many pest management professionals still do rotate baits, with 60 percent telling PCT that they rotate at least quarterly. Their reasons? To prevent resistance (60 percent), prevent bait aversion (55 percent), improve control of a resistant population (45 percent) or offer an option to an averse population (38 percent).

Hersh contends that effective control is more about bait placement than rotation. “To combat behavioral resistance, we need to be better hunters than in the past,” he says. “For many years, we've been able to simply place bait in places we would reasonably expect cockroaches to be, but now, we need to get the baits as close to the populations as possible to get the same results.”



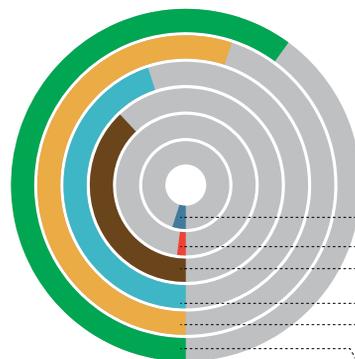
Has your location experienced “bait aversion” in any accounts when attempting to control cockroaches?



Number of responses: 310

## VICTORY WITHIN REACH

The PCT State of the Cockroach Market report indicates that while cockroaches continue to persevere in both wile and determination, pest management professionals nationwide are rising to the challenge. Armed with the right tools, a positive attitude and their own brand of cunning, industry pros are winning the fight account by account. And even as some markets are feeling rising pressure, Hersh offers reassurance: “We're still ahead of the game.”



For what reasons does your location rotate cockroach baits in its accounts?

- Location does not rotate baits 5%
- Other 2%
- Offer a different option to an averse population 38%
- Improve control of a resistant population 45%
- Prevent bait aversion 55%
- Prevent resistance 60%

Number of responses: 310

How would you characterize your location's experience with cockroach resistance in your market area?



Number of responses: 332



# PMPs Report Seasonal Differences, Varying Marketing Approaches

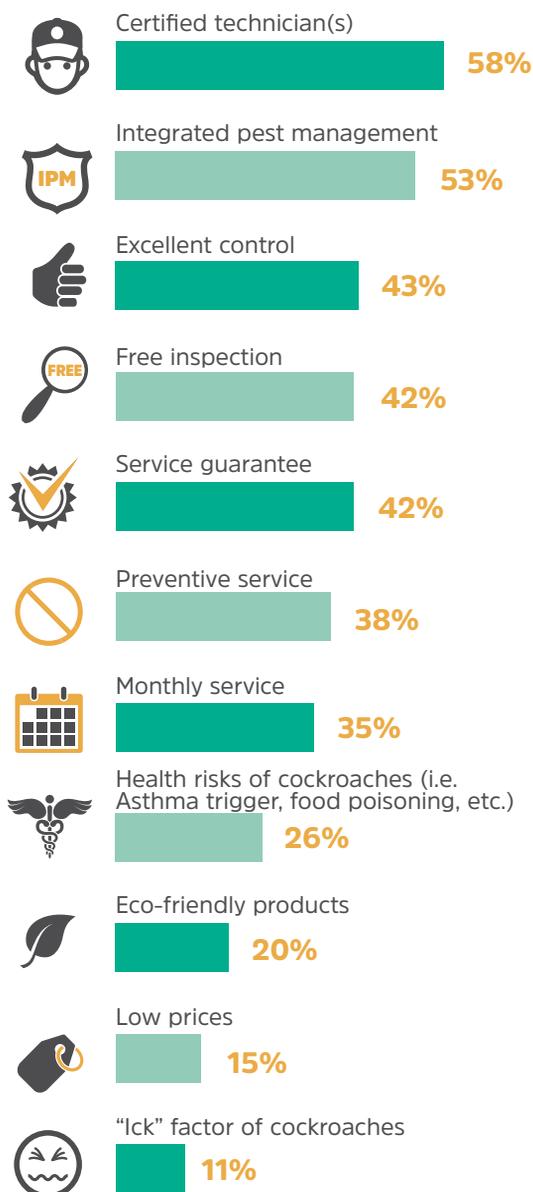
**F**OR MANY PEST MANAGEMENT PROFESSIONALS cockroach control is a year-round service, as 41 percent of respondents said there is no seasonal difference when it comes to their busiest time of year for cockroach control services. Other pest management professionals indicated that season does matter, and warmer seasons such as spring (12%) and summer (35%) are busier times for cockroach control.

When it comes to marketing cockroach control services, pest management professionals take into account a variety of their cockroach control program's components and market conditions. For example, many companies (58%) have been promoting the fact that their technicians are certified.

Similarly, popular marketing messages are focused on service quality such as the use of IPM (53%) and the ability to provide excellent control (43%). Other PCOs have stressed the value of their service by marketing aspects such as free inspection (42%) and service guarantee (42%).



**What aspects of your location's cockroach control services does it feature in its marketing efforts?**



Number of responses: 332

[ Oriental cockroach ]

SOURCE: BUGWOOD.ORG



# Managing Peridomestic Species

Control of outdoor-dwelling cockroaches poses unique challenges for PMPs.

**W**e talk a lot about controlling indoor, or domestic, cockroaches — primarily German cockroaches. But when you're dealing with peridomestic species, whose natural home is outdoors (although they often move indoors), you also need to have an outdoor game plan. Controlling American, Oriental, smokybrown and various wood cockroaches entails identifying and eliminating access points and harborage sites, and treating adjacent areas strategically.

“We treat peridomestic cockroaches as we do any seasonal invader,” shares David Hersh of Hersh Exterminating in Hermitage, Pa. “We identify where they're coming from and then treat with a variety of products, including pyrethroids where appropriate. (Keeping the pollinator issue in mind, we're using more granular materials than before.) Once these pesticides take effect and the ingress is halted, the indoor situation pretty much takes care of itself.”

Where should you look during your outdoor inspection?



**Start by checking the building exterior for cracks and crevices,** and inspect the openings where pipes, wires and cables come into the structure. Check gutters, eaves and other areas where damage might offer access points.



**Give the landscaping a good look.** Lisa Julien of N Texas Pest Control says that she inevitably finds American cockroaches here: “Check in and around shrubs and trees, and be sure to inspect any leaf or mulch pile-ups that may have accumulated in flower beds. They will always be there.”



**Explore sewers.** American cockroaches thrive in sewers. Chris Crone of CNJ Pest Management sees them all the time in New York City where American cockroaches are a constant presence in these locations.

“The issue we find is often an open sewer line,” Crone explains. “Screening it off cures 90 percent of the problem. We also find a lot of instances in older buildings where pipes were cut off but

not capped, or where pipes are rusted and leaking. That’s where American cockroach and drain fly infestations begin.”

Once you’ve identified where the cockroaches are based and how they’re gaining access into the building, you can eliminate harborage, apply exclusion measures, treat the perimeter and place baits to get the cockroach issue under control.



**Investigate dumpsters and trash cans.** “Oriental and other peridomestic species love to hang out around dumpsters,” says Arnold Katz of Graduate Pest Control in New York City. “We clean up around them and try to determine exactly where the colony is so we can place baits as close to them as possible. Then we talk to our customers once again about the importance of proper sanitation.”

## The Usual Suspects

In survey after survey conducted by PCT, our readers cited the following three cockroaches as the most commonly encountered: German cockroaches, American cockroaches and Oriental cockroaches. Here’s a quick refresher at how to identify these three commonly encountered cockroaches:

### German cockroach

**ORDER/FAMILY:**

Blattodea/Blattellidae

**SCIENTIFIC NAME:**

*Blattella germanica* (Linnaeus)

**DESCRIPTION:**

- ½ to ⅝ inches long when mature, light brown to tan, and have fully developed wings
- The pronotum or the shield-like segment behind the head has two dark parallel bars on it
  - Adult males are somewhat narrower than the females when viewed from below
  - Nymphs, ⅛-inch long when they emerge from the egg capsule, are almost uniformly dark except for a light tan area on the back of the second and third segments. As they develop, the light tan area becomes larger until, as mature nymphs, they have two parallel black bars



separated by a light tan area.

- The purse-shaped egg capsule of the German cockroach or ootheca is light brown, ¼ to ⅜ inches long, and typically has 15 to 20 eggs per side.

### American cockroach

**ORDER/FAMILY:**

Blattodea/Blattellidae

**SCIENTIFIC NAME:**

*Periplaneta americana* (Linnaeus)

**DESCRIPTION:**

- 1⅜ to 2⅜ inches long when mature, red-brown, and characterized by fully-developed wings which completely cover the abdomen.
  - The pronotum, the shield like area behind the head, has a dirty-yellow band around its edge.
  - The nymphs are gray-brown and ¼-inch long when they emerge from the egg capsule. As they develop, they



become more red-brown, and the yellow band becomes more prominent on the pronotum.

- The purse-shaped egg capsule, also known as the ootheca, is dark red-brown in color, ⅜ inch long, and typically has eight eggs per side.

### Oriental cockroach

**ORDER/FAMILY:**

Blattodea/Blattellidae

**SCIENTIFIC NAME:** *Blatta*

*orientalis* Linnaeus

**DESCRIPTION:**

- When mature, male Oriental cockroaches are red-brown to black and 1-inch long; and females are 1¼ inches long and the same color.
  - In males, the wings cover 75% of the abdomen; in females, they are reduced to small wing pads.
  - The early nymphs are light brown but become increasingly darker with each molt.
  - The purse-shaped egg capsule or ootheca is dark red-brown but becomes black with age, ⅜-inch long, and typically has eight eggs per side.



Source: PCT Technician’s Handbook, 4<sup>th</sup> Edition

## About the Survey

The PCT State of the Cockroach Market survey was sponsored by Syngenta and compiled by Readex Research, a privately held research firm based in Stillwater, Minn. A sample of 3,402 owners/operators of pest control businesses was systematically selected from the PCT database. Data was collected from 366 respondents – an 11 percent response rate – via an online survey from April 6 to 18, 2016. Nine percent of respondents were terminated from the survey after indicating in the first question they did not offer cockroach control services. The survey results represent an estimated population of approximately 6,200 recipients. The margin of error for percentages based on 332 usable responses is plus or minus 5.2 percentage points at the 95 percent confidence level.

American cockroach

SOURCE: BUGWOOD.ORG

# MANAGING EXPECTATIONS Key to Cockroach Work

**T**he PCT State of the Cockroach Market report reveals that callbacks on cockroach services continue to be low — on average, 4 to 6 percent. How are PMPs getting such great results?

First, they know their stuff. They're using integrated treatment protocols that attack infestations head-on and resolve customer issues in relatively short order. Second, many are building follow-up calls into their cockroach programs to ensure maximum efficacy. Explaining to customers that several service calls

will be required appropriately sets their expectations and helps them understand why their infestation isn't likely to be wiped out in a single visit.

"I learned when I worked for a large pest management organization that follow-up service calls should be built into the program," says Lisa Julien, today the owner of N Texas Pest Control. "I charge more on the initial call, of course, because we use more chemicals and often spend an hour or two on that first visit, depending on the severity of the infestation. Then I set follow-up calls two

weeks out and every two weeks following that until we see a dramatic drop in the population. Once we have control, we schedule maintenance visits until we're certain the cockroaches are gone."

Haynes Exterminating, of Buford, Ga., follows a similar practice. Bill Haynes shares, "When someone calls with a German cockroach infestation, we charge a hefty fee for that first visit and then build in a monthly fee that continues as long as the issue persists. The last thing we want to do is make a promise we might not be able to keep." 🍀

## What is the typical callback rate for your location's cockroach control services?



Number of responses: 332

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