

MOST UNWANTED:

A PMP'S GUIDE TO HARD-TO-KILL PESTS



Bed bugs, scorpions and spiders are among the PMPs' top concerns when it comes to callbacks. Pros-in-the-know share how to improve the odds of quickly controlling these tough-to-control pests.



The True Cost of Callbacks

Studies show that acquiring a new customer is five to 25 times more expensive than retaining an existing one.¹ In our industry, retaining customers often means guaranteeing results and retreating when initial efforts fail. As you well know, retreating can be costly when you consider technician time, additional product applications, mileage and missed opportunity cost because your resources need to be redeployed away from other customers. The reputation impact alone of having to re-treat can be detrimental to any business. There are many reasons that all pest control companies sustain callbacks:

- Encountering complex or tough environments
- Ineffective products
- Difficulty locating the source of the outbreak

But, underlying many callback scenarios are pests that are simply hard to kill – pests that require that extra amount of energy, that particular protocol or that entomologist know-how to manage. These are the pests that wake you up in the middle of the night and get you out of bed in the morning.

When we asked PCT readers in a Bayer-sponsored survey for their perspective on which pests should be classified as “hard to kill”, they told us that it was bed bugs, spiders, scorpions, and ants which present the greatest challenges.²

At Bayer, our mission is to leverage science to help create better lives for people where they live, work and play. This also means we exist to better *your* life and improve the way that you do business by increasing efficiencies and helping you manage risk. That’s why, like you, we aren’t afraid to stand up to hard-to-kill pests, and we create products and solutions that do just that. Products like Temprid FX are formulated to tackle the toughest pests. In fact, studies with Temprid FX have shown to reduce callbacks by up to 50%.³ This peace of mind just might help you sleep better at night by giving you the results you need to keep your customers happy so that you can focus on other things, like continuing to grow your business.

We appreciate all the insider tips and perspectives offered by experts across the industry that are compiled in this report. We hope you find the content that follows as valuable as we did.

Ildem Bozkurt



Head of Professional Pest Management and Public Health for the U.S.
Bayer



¹ <https://hbr.org/2014/10/the-value-of-keeping-the-right-customers>

² PCT Bayer-sponsored online survey

³ Bayer PMP callback studies, 2007-2009



HARD TO KILL?

(HARDLY)

Bed bugs, spiders and scorpions are among the PMPs' top concerns when it comes to callbacks. Pros-in-the-know share how to improve the odds of quickly controlling these tough-to-kill pests. Read on: Your reputation and bottom line may depend on it.

FACT: Hard to Kill is Bad for Business

You know it's true: Some pests are just harder to kill. They cause more callbacks, more employee frustration, more unhappy customers. They can dent your company's bottom line and something far more valuable: your reputation.

But what *exactly* makes a pest hard to kill? According to a recent survey conducted for Bayer by PCT, pests that prompt numerous callbacks topped the list for 61 percent of pest management professionals. Other PMPs cited pests that develop pesticide resistance (51 percent), pests that are constantly being introduced into an account (44 percent), pests that have developed behavioral resistance (26 percent), pests that are challenging to identify (23 percent), and pests that are secretive in nature or exhibit unique behaviors (19% each) as "hard-to-kill."

And while a majority of PMPs say they can control most structural pests with currently available tools, they also reported that certain hard-to-kill critters – namely bed bugs (51 percent), ants (28 percent), spiders (24 percent), stink bugs (22 percent) and scorpions (13 percent) – prove extra challenging.

"Fundamentally, there are two things that make bed bugs, spiders and scorpions collectively hard to kill," said Joe Barile,

BCE, technical service lead, Bayer, Environmental Science Unit. The first is how they're built: They have tough exoskeletons and walk on claws so they're rarely exposed to enough residual insecticide on treated surfaces to get a lethal dose. The second is how they act: They're cryptic, hiding in places that are difficult to find let alone treat.

And because time is money "we have the natural human tendency to miss a few places," which can mean the difference between control success and failure, said Barile.

It'd be easier if treating these pests directly was an option. Instead, "there's a whole lot more that goes along with (controlling these pests) than just throwing out product," said John Miller, director of sales and service of American Pest Control in Athens, Ga. ●

About the Survey

The online survey of a random sampling of pest management professionals was conducted by PCT for Bayer. Survey responses were gathered between May 12-20, 2018. A total of 152 PMPs responded to the SurveyMonkey survey.

Three of the Industry's MOST UNWANTED

Bed bugs, spiders and scorpions are built to withstand the most valiant control efforts. Pros-in-the-know shared insights to help you gain the upper hand.



BED BUGS: Teensy Mutant Travelers

Bed bugs are small. And they get EVERYWHERE: deep into clutter, upholstery and every nook and cranny from fabric seams to screw holes.

“There’s almost a physical impossibility for PMPs to treat all of those micro-harborage in a single visit,” said Joe Barile, Bayer, Environmental Science Unit. “You can easily miss something and if you miss something you still have them,” said David Billiot, owner of Billiot Pest Control and Termite Solutions, New Orleans.

Even if bed bugs do pick up residual insecticide, they won’t get a “secondary or behavior-related oral exposure,” Barile said. That’s because they have piercing-sucking mouthparts and can’t groom themselves like cockroaches and ants, which are “constantly cleaning their sensory organs” on antennae and feet by running them through their mouths, he explained.

Plus, “these aren’t our grandmother’s bed bugs. These are thick-skinned, hard-drinking, mutant bed bugs,” said Dr. Dini Miller, a leading bed bug expert and professor at Virginia Tech.

Some bed bugs have thicker exoskeletons so insecticide doesn’t penetrate the cuticle. Some produce more enzymes that attach to insecticide molecules in the body and render them useless. “It’s like how some people can drink all night long and others are lightweights and pass out,” she explained. In others, the alpha subunit on the nerve – where a pyrethroid molecule would lock in – “has changed shape” so the pyrethroid ‘key’ no longer fits, she said. If a few bed bugs with these mutations survive treatment and breed, a new generation of resistant pests will develop, Miller said. ●

6 Bed Bug Control Best Practices:

More is Better – “More information is better” so “start with a really good inspection” to find where the pests are hiding and breeding, said Mark Ringlstetter, director of training and technical services, Truly Nolen of America, Tucson, Ariz. Most retreats aren’t due to material failures but because “you missed something,” he said.

Big Picture – Thinking bed bugs are limited to the bed is “where we made mistakes,” recalled John Miller, director of sales and service, American Pest Control. They’re easily spread through the house by doing laundry or moving blankets to the couch. If present in a bedroom, they’ll likely be found elsewhere.

Source Material – Re-infestation “is a lot more common than what you’d think,” said Ringlstetter. Find where the problem started, like someone working in the home or a place often visited. Miller recalled months of retreats at a college student’s apartment; turned out her bedroom at home was infested, unbeknownst to her parents.

Preppers – “A major sanitation component” is needed to control bed bugs and “the homeowner has to do their part,” said Casey Swensen, president, Joshua’s Pest Control, Lenexa, Kan. Engage residents through education and by asking probing questions, like ‘Who did you visit recently?’

Alternate Approaches – No single bullet exists to control bed bugs; use multiple tools, including desiccant dust and pitfall monitors, said Virginia Tech’s Dini Miller. Apply products judiciously and alternate use of active ingredients.

One-Two Punch – “Research from Rutgers University and some of our field studies have shown that those onesie-tuosie introductions often do not develop into infestations. So catch these individuals in a pitfall trap,” said Miller. Bed bugs do a lot of moving around; it’s easier to have them wander into a monitor than to try and track them down. “It is even easier to smash these onesie-tuosies with our fingers, so let’s do it,” she said.



SPIDERS: Tippy Toe Walkers

Spiders get so bad on the shores of Lake Michigan's Green Bay that "some of the places actually look like haunted houses," said Will Peters, owner of The Bug Blaster in Suamico, Wis. Just having lights on *in* the house attracts the prolific web builders, he said.

Not only do spiders "walk on their tippy toes," but they spend considerable time in their webs, so they're not in contact with enough insecticide to kill them, said Stoy Hedges, an industry consultant who co-authored the *PCT Field Guide for the Management of Urban Spiders* (2012, 2nd edition).

Hunter spiders range about the yard and are very active, but "you can't spray God's green earth to make sure there's enough

residual treatment down" to catch them, said Joe Barile, Bayer, Environmental Science Unit.

Spiders are "really smart and careful. If the nerve endings on their feet sense something fishy going on ... they'll get out of that area," said Casey Swensen, Joshua's Pest Control. And they don't groom themselves so they're not going to ingest that insecticide, he said.

When not in webs or hunting, spiders hole up in cracks and crevices. Consider the brown recluse spider: "The answer's in its name. It's reclusive. It hides. You won't find them out in the open," said Mark Ringlstetter, Truly Nolen of America.

"Unless you can directly spray a spider, it's really hard to get a knockdown on a spider," said Truly Nolen's Mark Ringlstetter. ●

6 Spider-Centric Control Tricks:

Use the Web – To figure out where spiders live, "use the web as a map," said John Miller, American Pest Control. They often hide in nearby cracks and crevices; apply product to these harborages. "That's where a lot of technicians miss out on killing spiders," he said.

Then Remove It – Regularly sweep down webs with a duster coated with residual insecticide. It takes "a lot of resources to rebuild the web" and this stresses the spiders, said Joe Barile, Bayer, Environmental Science Unit. Some recycle webs by eating them, which may offer oral exposure to the active ingredient, he said.

Prey Diet – To control spiders, "get rid of why they're there to begin with," which is other insects, said Miller. "Some shrubs attract spiders more than others," added Will Peters of The Bug Blaster, who treats perimeters. Ensure attic and crawlspaces are well ventilated and use yellow bulbs for porch and flood lights.

Power On – In severe cases, Peters has power-washed his customers' houses to remove webs and egg sacks. Once dry, he applies residual insecticide to exterior fascia and soffits, around windows and doors and to the perimeter. Don't delay treatment; spiders will begin web building within hours, he said.

Recluse Rigor – A whole-house approach is needed to control brown recluse spiders. Treat cracks and crevices with a residual insecticide from basement or crawl to attic; treat behind wall plates and at wire and plumbing penetrations, between attic boards and under insulation, said industry consultant Stoy Hedges.

Widow Walks – "The best time to go look for (black widows) if you've got a really bad issue is at night when they come out into the webs," said Hedges. You'll find them among clutter at ground level or slightly above; remove by vacuuming or direct spray, he advised.



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SCORPIONS: Über Hiders

Ants may be the number one reason people call for pest control, but scorpions are “very, very high on that customer concern list,” said Nathan Watters, president of Cummings Termite & Pest in Scottsdale, Ariz., who was stung in his own bed by such an invader.

While the Arizona bark scorpion, *Centruroides sculpturatus*, takes top billing for its potentially life-threatening sting, other less-venomous species range across the southern U.S. from North Carolina to California. “By nature they hide out and you don’t usually see them,” said Mark Ringlstetter, Truly Nolen of America.

That’s because “they jam themselves into these physical spaces in the outdoor environment,” like into the joints of a decorative retaining wall, underneath the bark of trees, into tree holes, wood piles, debris and clutter, explained Joe Barile, Bayer, Environmental Science Unit.

Sometimes they find their way into houses “in large numbers,” said Stoy Hedges, a board certified entomologist and former director of technical services at Terminix. He’s seen homes in Georgia with “hundreds of scorpions” living inside the attic walls. They can go for months without food or water in these spaces, said Watters.

Bark scorpions can climb rough surfaces and will head indoors for shelter and warmth; sometimes they’re accidental stowaways, brought inside after crawling into a shoe or other item left outside.

The further West you go, the more prevalent scorpions seem, said Hedges. That’s because the predators are attracted to moisture that concentrates around buildings. These micro-environments are where scorpions’ prey – other insects, spiders and centipedes – live so there’s plenty there to feed on, he explained. ●



6 Scorpion-Specific Control Tips:

Night Moves – Scorpions are active at night. “Schedule a night inspection and go out there with an ultraviolet light” to pinpoint concentrations; scorpions will glow blue-green under the light, said consultant Stoy Hedges. Use long-handled forceps to physically remove them.

Mechanical Fixes – Ask clients to remove wood piles, yard clutter and ground cover to eliminate harborage. Use sticky traps indoors to catch scorpions crawling along walls and behind furniture; seal cracks and holes, screen vents and other entry points to keep scorpions out, said Hedges.

Prey Elimination – Scorpions are present because their prey is. “What you really want to target is the food source; get rid of the food source and you’ll get rid of the (problem),” said Mark Ringlstetter of Truly Nolen of America. An exterior perimeter treatment can help with this.

Tactical Yard Treatments – Choose carefully where to treat. Every nook is a potential hideout (all those rocks in Southwest landscaping!) but treating everywhere is neither effective nor label compliant, cautioned Joe Barile, Bayer, Environmental Science Unit.

Indoor Hot Spots – Severe infestations may require treating under attic insulation, eaves and soffits where scorpions may enter or harbor; it may be necessary to empty the garage of boxes and other items to treat it effectively, said Hedges.

Formulation Focus – Scorpions “are larger creatures so they need contact with greater amounts of insecticide” to acquire a lethal dose, said Hedges. Formulations that make AIs more available on the surface offer better results, he said. So do those that can endure intense temperatures, UV rays and alkaline, acid and porous surfaces.

PHOTO: STOY HEDGES

FACT: Everyone Wins with Fewer Callbacks

“Callbacks cost you money. The more times you go back, the more overhead you have in that account” but “your reputation is the biggest thing that takes a hit,” reminded John Miller, American Pest Control. “You don’t want to be known as the company that could not get rid of a problem for someone,” added Mark Ringlstetter, Truly Nolen of America.

That’s why Casey Swensen of Joshua’s Pest Control switched to Temprid FX in May 2017. “Ever since I started using Temprid as our go-to product, we’re down at least 50 percent on our callbacks” for spiders, bed bugs and other pests, he said. At first he thought “‘these numbers are crazy’ but it’s held out to be true month over month. It’s great for the business and, of course, your customer satisfaction goes up a lot,” Swensen said.

According to the survey conducted for Bayer, most PMPs (52 percent) said they encountered hard-to-kill pests in the summer season, followed by spring (32 percent). Those are the busiest times of the year to be saddled with retreats, which makes a reliable solution all the more important.

Temprid FX combines two active ingredients – imidacloprid and beta-cyfluthrin – that “work better together” than alone, said Joe Barile, Bayer, Environmental Science Unit. The AIs are co-milled into the same crystal, not just mixed together in the package, “so every crystal gives each target pest exposure to

both AIs at the same time,” he explained. “That’s a significant difference” from other products and “important for fast control” of bed bugs, spiders and scorpions, Barile said.

As a suspension concentrate, these crystals stand up on surfaces so pests have a greater opportunity to come in contact with them compared to liquid, which settles into macroscopic and microscopic fissures and holes, he said.

Miller likes the product’s broad label, which lets him treat key areas for bed bugs, such as mattress seams and bed springs. He now uses one product instead of two or three for these jobs, and the dual AIs help reduce the likelihood of bed bug resistance, he said.

In spring, Miller applies Temprid FX outdoors to perimeter plants to help reduce prey that attracts hard-to-kill pests. The imidicloprid is absorbed systemically by plants to kill sap-sucking insects like aphids, thrips and mealybugs; beta-cyfluthrin knocks down pests harboring in the perimeter landscape.

Still, “you’re only as good as the technician in the field and if that technician is not trained appropriately it doesn’t matter what product you’re using,” reminded Nathan Watters, Cummings Termite & Pest. He credits his 87 percent drop in scorpion callbacks to using Temprid FX and to the “ample training on how to use this product effectively” that Bayer provided his team.

“With Temprid FX, there are very few insects that are hard to kill,” said Will Peters, The Bug Blaster. ●



Temprid FX combines two active ingredients – imidacloprid and beta-cyfluthrin – for knockdown and long-lasting control for hard-to-kill pests.



What's the Cost of Failure?

ADMITTEDLY, Temprid FX costs more up front for PMPs. But David Billiot, Billiot Pest Control and Termite Solutions, “tried using generic (products) to keep costs down and it wasn’t successful. I’d rather spend a little bit more and use a good product” that makes customers happy as well as technicians who work on commission.

Too many people in the industry look at the cost of products and choose to use the least expensive without understanding the full cost of service failures, said John Miller, American Pest Control. From callbacks to lost reputation, “it’d cost them less” in the long run to use a product like Temprid FX, he said.

One for the Money

New mono-dose packaging for Temprid FX makes treating hard-to-kill pests easier and more exact. The new package size gives PMPs one dose for one gallon of water. Not only does this help PMPs manage product inventory and storage issues, but “it’s very difficult if not impossible to overmix the product,” said Joe Barile, Bayer, Environmental Science Unit.



MOST UNWANTED PESTS



Universal Control Tips for Hard-to-Kill Pests



Get Back to Basics – Having pest problems? “Always go back to your training on the biology and behavior of your critter,” they haven’t changed in thousands of years, said Joe Barile, Bayer, Environmental Science Unit. “The most important tool is the muscle between your ears,” reminded John Miller, American Pest Control.



Learn to Listen – “We tend to get sort of an occupational callus when we speak to customers because we think we’ve seen it all” but customers “can be incredibly insightful if you listen very carefully to what they’re experiencing” and ask probing questions, said Joe Barile, Bayer, Environmental Science Unit.



Offer Proofing – “Make sure the structure is as pest-proof as possible,” said Barile. If you don’t provide exclusion services “you really need to get on the bandwagon,” he said. Pest-proofing works long term. “If you strictly rely on chemistry, you’re always going to be treating. That’s a losing battle,” said Barile.



Know Homes – Whether you’re flushing scorpions out of walls or sealing up entry points, “it’s a tremendous benefit if you understand the construction of the home,” said Nathan Watters, Cummings Termite & Pest. “If you seal up a home too tight, the home can’t breathe. Understand which areas threaten a home’s envelope and which do not,” he said.



Stick to the Label – “PMPs must, must, must remember to remain label compliant” with their applications, said Barile. Don’t try to prevent a callback simply by spraying more.



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