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PITFALL-STYLED INTERCEPTION DEVICE BIGGEST GAME CHANGING PEST MANAGEMENT TOOL SINCE ENCASEMENTS

Dr. Richard Cooper explains through extensive research how interception devices should be a staple tool in bed bug treatments

Lawrenceville, N.J. — Nationally recognized bed bug expert [Dr. Richard Cooper](#) found through extensive research that the use of pitfall interceptor devices (traps used to catch bed bugs) play a critical role in the treatment of bedbug infestations of all sizes.

Cooper views interception devices as one of the biggest game changing tools in the battle against bed bugs since the introduction of encasements.

“Just like encasements, pitfall interceptor traps should be a staple of every bed bug job,” he said. “I can’t imagine treating a home or apartment without them.”

However, currently interceptors are only being used by about 56 percent of the industry according to a recent survey conducted by the University of Kentucky and the National Pest Management Association (NPMA). Cooper expects this to change, adding “once pest management professionals begin to realize the importance of the interceptor traps, they will build the cost of using them into all jobs, just as they did with encasements.”

[Dr. Michael Merchant](#), professor and extension urban entomologist at [Texas A&M AgriLife Extension Service](#), agreed with Cooper on the perspective that pitfall interceptor traps are a game changing tool for bed bug treatments.

“Because of their cryptic nature and the difficulties associated with detecting bed bugs, especially low populations of bed bugs, having a good inspection tool is a game changer,” Merchant said. “Experience shows that early detection of bed bugs facilitates control, and keeps pest control costs down. Interceptor traps provide great tools for monitoring bed bugs 24/7.”

Research has shown that pitfall interceptors are the most effective detection tool that currently exists. This is important for identifying new infestations as well as determining when an infestation has been eliminated.

“Once an infestation has been treated, it’s much harder to find bed bugs that are still existing,” Cooper said, “because you won’t find them in the traditional resting areas. What’s left of the population is going to be in places that you’re probably not going to see during a visual inspection, but the traps are going to pick them up over a week or two period of time.”

According to Cooper, bed bug management programs will benefit greatly once interceptors are incorporated into the service.

Cooper first decided to conduct his research following Changlu Wang's research that was published in the Journal of Medical Entomology (2009). The study showed significantly more bed bugs were captured in the exterior well of pitfall interceptors placed under the legs of beds, indicating that a large number of bed bugs were located in areas away from the sleeping areas and were traveling to the bed in search of a blood meal. In addition to this finding, Wang and his colleagues concluded that the large number of bed bugs trapped contributed to the control of infestations, provided relief to residents and helped in evaluating the effectiveness of treatments.

The landmark study conducted by Wang, led Cooper to conduct a series of other experiments, using the interception device to study the movement of bed bugs within and between apartments.

What Cooper discovered challenged much of what was previously believed to be true regarding bed bug activity in apartments. According to Cooper, visual inspections only reveal the bugs that can be seen at the time the inspection is conducted, which is usually during the daytime hours. Therefore, it isn't surprising to find bed bugs in predictable locations like beds and upholstered furniture.

However, "by placing interceptor traps throughout the apartment, we can monitor bed bug movement 24/7," Cooper said.

Cooper discovered that when bed bugs aren't at rest, they are moving all over the place. More bed bugs were captured away from beds than at beds, including places where bed bugs would typically not be expected, such as bathrooms, kitchens, hallways, as well as actively migrating to neighboring apartments.

"Nobody knows the reason why they are so mobile," Cooper said, "but it might be a survival strategy that evolved over time. It's possible that they developed a strategy over time that by moving throughout an apartment they can find other areas where hosts sleep or rest. That way they can establish aggregations within multiple locations in an apartment or building where they can get food."

Through his research, Cooper determined that interceptors are not only an effective detection device, but also plays an important role as a bed bug management tool. When placed at beds, they are eliminating bed bugs from the population before they reach the host, which not only reduces bed bug populations but also reduces the number of bites experienced by the residents.

"When the infestation has been reduced to very low levels or an infestation that has been treated, it's going to be much harder to find bed bugs that are still existing," Cooper said, "because you won't find them in the traditional resting areas. What's left of the population is going to be in places that you're probably not going to see during a visual inspection, but the traps are going to pick them up over a week or two period of time."

Additionally when placed away from beds, the traps provide valuable information that can be used to locate bed bugs in unpredictable areas.

"However, our most surprising finding is the disruptive influence interceptors have on bed bug populations when the traps are placed throughout apartments," Cooper explained. "In fact, in apartments with low-level infestations, mass trapping with interceptors resulted in the elimination of 50 percent of the infestations with no other treatments."

Cooper went on to say, “There’s a number of take home messages about using interceptors. Interceptors at the legs of the bed and other resting areas are very important, not only for detection, but also for providing relief, potentially reducing numbers and having an effect on control.”

[Dr. Dini Miller](#), professor of Urban Pest Management, [Department of Entomology at Virginia Tech](#), agreed with Cooper that interceptor traps are essential in bed bug management and can be used a variety of beneficial ways.

“I’ve been telling everybody that the pitfall traps are about as good as it gets,” Miller said. “We haven’t seen anything that’s better, in my opinion. You don’t need to have them with the bed legs inside. These bugs are wandering around enough that if there’s a trap there, you’re going to catch bugs. I think there’s a lot of utility that way and the more traps you have out, the better your chances are of catching something.”

Cooper also explained that in addition to putting interceptors within the resting areas, an added benefit to capturing more bugs is by placing them throughout the dwelling. He admits, that while it is unlikely this type of use will be widely adopted by the pest management industry, there are situations when it will be beneficial to do so.

“If you have an infestation and you aren’t getting it resolved as quickly as you think it should, then on those jobs putting interceptors throughout the dwelling may provide you with a lot of information that helps you solve the problem,” Cooper said.

Through various field observations, Miller agrees that interceptors are vital for confirmation that bed bugs have been eliminated following treatments.

“If you’re not seeing anything and they used to have bed bugs but received treatment, then it’s critical that monitors go in those units and be checked regularly,” Miller said. “It’s absolutely critical that every place that’s been treated to have pitfall traps in there, that way we can see if there’s anything left.”

Cooper insists that pitfall interceptors are truly a “game changer.” With everything that is currently known about pitfall-style interceptor traps, he is interested on how the industry will take advantage of the exciting and beneficial tool.

Cooper expects most will simply use them at beds and furniture, which the “benefits of doing so will great,” but what he is most interested in seeing is how the traps are used away from beds.

“I think adoption of this type of use will be much slower, but I’m sure some of the more progressive companies out there will take advantage of the full potential these traps have to offer,” he said.

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About Cooper Pest Solutions

[Cooper Pest Solutions](#) is a progressive and full-service pest management firm located in Lawrenceville, NJ. Since our founding in 1955 by Theodore H. Cooper, we strive to develop or adopt the most advanced and effective pest treatment methodologies available. We innovate and find tomorrow's pest solutions today through a unique blend of our entomologists and team creating unique & effective pest solutions. To this end, we apply a multidisciplinary approach to pest elimination that ensures the most reliable and effective results while reducing pesticide usage and exposure. We are a family-run company that values our ability to Do the Right Thing, find solutions instead of problems and work collaboratively in a team environment. With every interaction we seek to achieve our company mission: WOW our clients, WOW our teammates, WOW our community and WOW our service partners.

About Bed Bug Central

[BedBug Central](#) is the nation's most authoritative source on bed bugs and related issues such as health, detection, and treatment. Nationally regarded entomologist Richard Cooper helped develop the company in 2009, in response to the lack of quality information available on bed bugs. BedBug Central is home to the SenSci Volcano™, an interception device that captures bed bugs, and the SenSci Activ™, a bed bug lure developed and tested through laboratory research conducted by Rutgers University.