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K-9 Patrols Are the New Weapon in the War on Bed Bugs

By Douglas Stern, Managing Partner Stern Environmental Group

Bed bugs are making a comeback nationwide and the pest control industry is seeking new technologies to combat the increasingly pesticide-resistant insects. Cutting-edge technologies at both ends of the temperature spectrum include Cryonite which uses a non-toxic carbon dioxide snow to instantly freeze and kill the noxious pests and giant infrared heaters that raise the temperature in a room and bake the bugs to death. The University of Minnesota is working on a trap that simulates a sleeping human, the bed bug's favorite meal.

Perhaps the most popular weapon in the bed bug-fighting arsenal – possibly because of its sloppy kisses and wagging tail – is the dog. Dogs, which have been trained to sniff out weapons, arson, drugs, missing persons, termites and cancer, are now being trained to detect and pinpoint bed bugs and their eggs, helping exterminators target treatment areas.

The average dog has 200 to 250 million scent receptors in its nose. Its nasal membranes cover seven square meters. In comparison, human nasal membranes cover barely half a meter and contain only 5 million receptors. A dog's scenting ability is so sensitive it can smell things that can't be detected by the most sensitive scientific instruments. Depending on the dog and its training, a dog's sensitivity to odors is 10 to 100 times greater than man's.

“A dog's nose is cutting-edge technology,” Carl Massicott, owner of Connecticut's Advanced K9 Detectives, told the New York Daily News. “Our animals are 100 percent honest and trained to work for food and love instead of profits.” It's the dog owners who are raking in the profits. Depending on facility size and travel time, the cost of K-9 bed bug detection is about \$200 per hour. Typically K-9 services provide initial and follow-up detection but not bed bug extermination services. Dogs can help pest control experts determine what areas to treat and in follow-up can indicate whether all bed bugs have been killed.

A trained dog can thoroughly investigate a room and locate bed bug infestations in two to three minutes, less time than it takes a human technician who must rely on visual clues which can require a thorough inspection of the home. Typically, dogs can detect infestations within a three-foot radius but may not be able to narrow it down further. For example, a dog may indicate that bed bugs are under a piece of furniture but be unable to indicate whether the bugs are hiding in furniture joints or floorboard crevices. Dogs are trained to alert their handlers to the presence of bed bugs by swatting a paw or barking. Smaller dogs are favored for their ability to negotiate tight spaces.

Pepe Peruyero, owner of J&K Canine Academy, got started in the pest control business by training dogs to detect termites. A former law enforcement officer who worked with K-9 units in Gainesville, Florida, Peruyero assisted University of Florida entomologists in conducting rigorous scientific tests to determine dogs' ability to detect insects. Those tests confirmed that dogs could detect not only termites, but several other types of insects, including bed bugs, and a business venture was born. Employing the same training techniques used to train drug- and

bomb-sniffing dogs, Peruyero was able to develop training and testing standards for bug-sniffing dogs.

Today, business is booming. Last year Peruyero trained just one dog to sniff out bed bugs, but this year he has already trained 15 dogs and has another dozen or so dogs on the waiting list. His is one of only six facilities worldwide that train dogs to detect bed bugs. Training takes five days and includes training the dog's handler. Handler and dog teams must prove themselves in simulated hotel room settings, detecting the presence or absence of bed bugs with 100 percent accuracy before graduation. To prevent dogs from spreading bed bugs while they're working, handlers are taught specific grooming protocols that include brushing, cleaning and drying the dog immediately before and after a job.

Insect detection is a cutting-edge business opportunity. "We realize that bed bugs are on their way to becoming part of our daily lives," said Mary Silverson, vice president of Hunter Detection Services on Florida's Gulf Coast and new owner of one of Peruyero's bed bug-sniffing dogs. Trained pest-detection canines cost around \$8,000 and their upkeep, including food, veterinary care, handler's salary and transportation, can range from \$80,000 to \$100,000 a year. To keep their sniffers sharp, dogs must run through their detection paces every single day.

Bed bugs are tiny, blood-sucking insects that feed on human blood. They are easily spread and difficult to detect as only about 50 percent of the people whose beds they share react to their bites. About the size of an apple seed, bed bugs hide in tiny crevices and cracks. They are most commonly found in mattresses, box springs, furniture, baseboards, carpeting, floorboards, behind wallpaper, and in electrical outlets near the bed. Although bed bugs are not known to carry disease, the itchy red welts they raise and the emotional toll of knowing you're being nibbled on in your sleep can cause serious mental distress. Their slightly sweet scent, which has been likened to fresh red raspberries or coriander, makes bed bugs a natural for K-9 detection.

Well-trained dogs can enter a room and within two to three minutes alert their handlers to the tiniest trace of bed bugs. Dogs can be trained to tell the difference between live bed bugs, dead ones, cast skins, eggs and even bed bug fecal matter. Paired with cutting-edge pest extermination, bed bug-sniffing dogs can perform an invaluable service for hotels, hospitals, nursing homes, colleges and universities, apartment complexes, military barracks, camps, cruise ships, airlines, and anywhere bed bugs might be a problem. The dogs quickly locate bed bug trouble spots, allowing the pest extermination experts to efficiently target and eliminate bed bug infestations. Dogs can also be used in follow-up procedures after treatment to guarantee that all bed bugs have been killed.

The exclusive Jurys Boston Hotel is one of 10 Boston hotels that uses canine patrols to check its 225 guest rooms for signs of bed bugs. In its nearly four years of operation, Jurys has never had a bed bug incident. Only twice in those four years have the specially trained canine pest hunters barked, apparently detecting the scent of bed bugs or their eggs. In both cases, Jurys took no chances. They immediately fumigated the room for bed bugs and burned the mattresses. "At the first sign or suggestion of a problem, our reaction would be to treat the room with chemicals, no questions asked," said general manager Stephen Johnston in an interview with The Boston Globe. Johnston calls in the canine patrol for a bed bug inspection every three months.

While guest comfort may be the primary reason hotels contract for pest control, avoiding potential law suits runs a close second. A couple from New Jersey sued the Boston Park Plaza Hotel and Towers last fall after claiming they were bitten by bed bugs during a two-night stay. Another couple who suffered a similar experience sued the Sheraton Four Points in San Francisco. It takes just one unwitting bed bug-carrying guest to infect a hotel room. Adept hitchhikers, bed bugs can be carried into a hotel or home on clothing, suitcases, linens and used furniture.

The National Entomology Scent Detection Canine Association was formed to develop and set training and certification standards for bed bug-sniffing dogs. Before you hire a K-9 patrol, ask the following questions:

Is the dog certified?

Can it differentiate between living and dead bugs?

Can it sniff out eggs?

How are the dog's findings validated?

Remember, finding bed bugs is just the first step. Exterminating them is what's important.