

Jonathan Frisch

Vice President, Sales and Marketing, AP&G

The do's and don'ts of bedbug control:

Do:

Take the risk of bedbug infestations seriously. Bedbugs are resurging throughout the U.S. and they're capable of producing many troublesome and costly complications for your customers. Be proactive and educate employees about minimizing the infiltration of bedbugs into your customers' facilities. Teach them to recognize the telltale infestation signs. Establish a proactive monitoring strategy for your customers. Looking for evidence of bedbug infestations is the best way to ensure early detection and help pinpoint where treatment is needed.



Don't:

Allow your clients to believe it'll never happen in their facility. Bedbugs can infest almost any location where warm-blooded hosts (people) tend to congregate. Allow your customers to believe eradication is a simple process. It's often a long-term undertaking and an expensive reality, which they would've expected you to prevent. Fail to offer intervention strategies such as bedbug monitoring. Your customers will benefit from the protection and appreciate your professionalism.

Bob Hickman

Market Development Specialist,
BASF Pest Control Solutions



The BASF Pest Control Solutions Prescription Treatment* encourages pest management professionals (PMPs) to: inspect and gather the information that leads to good decisions;

prescribe a treatment strategy to achieve specific goals and combat pyrethroid resistance; communicate with the client to promote cooperation, establish expectations and convey value; treat using effective techniques and materials that support the strategy, such as nonrepellent materials; and follow up to assess the results.

When prescribing the right treatment strategy for bedbugs, take all options into consideration, including chemical, mechanical or a combination of methods. An integrated pest management (IPM) program could entail: A vacuum and use other mechanical means to kill and remove exposed bedbugs quickly as a first step to a thorough treatment program. A directed contact treatment can reduce bedbug populations quickly, especially in complex harborages where the mechanical methods are less effective. Treat and neutralize eggs wherever bedbugs are found using an insecticide on exposed bedbugs within a localized area. Use an insecticide around bed frames, box springs and headboards, and in cracks and crevices associated with baseboards, moldings, carpet edging, wall fixtures, nightstands, dressers and other hard furniture. Spot treat on baseboards, the undersides of dressers and drawers, and other furniture bedbugs crawl on near aggregation sites or en route to feeding. Perform a void treatment on enclosed spaces where insects may live, hide or travel. Common voids include hollow bed frames, platforms, walls and other hollow structures.

** Information taken from the SmartSolution for Bedbugs guide.*



Dr. Byron Reid

Product Development Manager, Environmental Science (a business unit of Bayer CropScience)



News of bedbug infestations spreading to all areas of the country has become common, and the pests have been discovered even in nontraditional locations, such as retail stores, movie theaters and athletic clubs. Although they don't spread diseases, bedbugs may take a physical and mental toll on their victims through sleepless nights, stress and embarrassment about the stigma associated with infestation. It's important to educate yourself, your staff and your customers about pesticide and nonpesticide treatments.

Pesticide treatment recommendations for bedbugs

1. First, break the room into zones and inspect/treat one zone at a time. Isolate (plastic bag) all noninfested materials, and place them in a safe spot. Take extra care not to spread infested items around the site.
2. Apply an insecticide labeled for bedbug treatment to active and potential bedbug harborage sites. Beds are the focal point for infestation. The majority of bedbugs will be living on, in or directly adjacent to sleeping areas.
3. For infested mattresses, ask customers to remove linens, blankets and comforters before treatment, and instruct them to wash before reuse. Apply liquid residual insecticide to tufts, seams, folds and edges until moist. Allow it to dry before remaking the bed.
4. Treat bedsprings, box springs and the interior of bed frames and headboards, including all cracks and joints. If the bed structure has hollow frames (tubing, enclosed voids), consider treating voids with a labeled insecticide dust. Don't forget to treat box springs or foundations, including the interiors.
5. When bedbugs are found in upholstered furniture, apply insecticide only to the infested tufts, seams, folds and edges. Don't apply to flat surfaces where prolonged human contact will occur. If bugs heavily infest furniture (inside cushions and/or batting, for example), apply a labeled insecticide dust or consider fumigation.
6. Apply liquid residuals as a crack and crevice treatment beneath floor coverings and carpets, as well as to all baseboards, moldings, closets, shelves, curtains, furniture and picture frames that may provide harborage to bedbugs.
7. Dust wall voids where bedbugs may harbor. Pull carpet edges from the tack strip and apply dust directly to the wall/floor junction. Replace the carpet so no dust is available for contact in the living space.

Nonpesticide treatment recommendations for bedbugs

1. Teach customers, such as hotel staff and apartment managers, how to identify and report bedbugs and signs of an infestation, such as blood and fecal spots on bedding and along the seam of a mattress.
2. Before treatment, ask your customers to strip all bedding. Items such as clothing, sheets, linens, bedspreads and curtains may need to be professionally cleaned.
3. Personal items (stuffed toys, shoes, hats, etc.) that are infested may be run through a home dryer for a minimum of 10 minutes on medium heat to kill all stages of bedbugs. Use a dryer door rack for bulky items like shoes.
4. Reduce clutter to eliminate potential bedbug hiding spots.
5. Vacuum visible bedbugs, and dispose of the vacuum cleaner bag immediately after cleaning.

Doug VanGundy

**Director of Specialty Products Development,
Central Life Sciences**



Bedbugs are back with a vengeance. The re-emergence of this age-old pest has become a nationwide epidemic in hotels, residences, retail and office establishments, dorm rooms and daycare centers. As their wrath continues to spread, bedbugs present a unique control challenge for pest management professionals (PMPs) and their customers, and the reality is they're poised to stay.

Bedbugs are a challenge to control, and PMPs need to take a broad approach to minimize bedbugs' impact, and limit opportunities for infestations. Customers have a responsibility to be proactive about addressing the problem.

Various methods and products can be used to treat bedbug infestations, including low-odor sprays, dusts and aerosols. PMPs should provide customers with a pretreatment checklist to ensure that once applied, the products have the opportunity to work effectively.

Other considerations for being proactive about preventing infestations include:

Vacuuming, steam cleaning and hot-water laundering of infected bedding items are essential.

Reducing clutter is a necessity because items strewn about rooms allow many places for bedbugs to hide and can impede inspection and treatment.

Customers should caulk cracks and crevices where the bugs can thrive, such as around floorboards and moldings.

Newer strategies, such as superheating and mattress liners treated with permethrin, are other tools to combat the pests.

Customers also can work with PMPs to use insect growth regulators (IGRs), which break the life cycle of insects and prevent infestations from rebounding. Gentrol IGR from Zoëcon Professional Products, a division of Central Life Sciences, can be used in conjunction with an adulticide as part of a complete integrated pest management program.

Dr. Dina Richman

**Development Manager, FMC Professional
Solutions**



Bedbugs seem to be everywhere these days, but what do you know about them? It never hurts to review the basics. Bedbugs are small, flattened reddish creatures, about 3/8-in. long. Their development time is about 21 days. During development, they go through five nymphal instars. Bedbugs don't have a larval stage; they develop by a process known as gradual or incomplete metamorphosis.

Eggs hatch to a form that closely resembles the adult, but much smaller without fully developed reproductive structures. Newly hatched bedbugs, called nymphs, go through several molts to reach adulthood.

Female bedbugs can lay one to five eggs per day in cracks or crevices. They readily infest mattresses, bed frames and box springs, laying eggs along mattress edges or around mattress buttons. Eggs also can be glued to rough surfaces.

The average bedbug life span is six to 12 months, and they feed every 10 days or so. Bedbugs may survive many months without a bloodmeal, and they reproduce in an unusual fashion: a male traumatically inseminates a female by piercing her body and injecting his sperm.

In addition to areas around the bed, bedbugs will inhabit cracks and crevices throughout an infested room, including behind picture frames, switchplate covers, loose wallpaper, baseboards and along the edges of carpets.

Inspection and treatment

Before treatment, perform a detailed inspection of the premises to verify bedbugs are present and estimate the population visually. Focus on the sleeping areas and objects nearby, such as headboards, bed frames, nightstands, etc. But the whole dwelling should be inspected. Look for eggs on baseboards, walls, wall outlets, pictures and luggage.

Treatment begins with clearing bedbugs and eggs from mattresses and any other location/furniture where people or pets rest or sleep. Certain pyrethrin-based flushing agents can help stimulate the bugs to move out of hiding. Aerosols also can be used to flush insects from hiding spaces.

Treat other infested or suspected infested areas associated with the bed, such as the box spring, headboard and bed frame, with a residual insecticide.

Last but not least, always schedule a follow-up inspection and treatment.

Ron Schwalb

National Technical Manager, Nisus Corporation



A thorough inspection is necessary to determine the extent of a bedbug problem and identify all potential areas of harborage.

It's important to engage and educate your customer because their cooperation is essential to the success of a complete control program.

When inspecting a home or hotel environment, look for harborage areas that could come into contact with a sleeping or resting individual: mattresses, headboards, end tables and baseboards near the bed. Don't overlook the smallest crack.

If infestation is found, review the proposed treatment program carefully with your customer. Provide instructions for how to prepare in advance of treatment including — what and how to clean, and what to leave alone. Clothing, bed coverings and any other washable materials should be removed in sealed bags, properly washed in hot water, dried in high heat, and then resealed in airtight (bedbug-resistant) storage until treatment is complete.

The mattress is always an obvious area on which to focus. You may have a number of options for control, including steam, directly applied control agents and the installation of bedbug-proof bed encasements. If you choose to treat the mattress, select a product that's specifically labeled for this application with the least potential effect on people. In places such as hotels where travelers can bring them in easily with their luggage, set up a regular inspection and treatment plan to mitigate future problems.

Dr. Bob Cartwright

Technical Manager, Syngenta Professional Pest Management

While multiple tactics exist to control bedbugs, most experts consider a residual insecticide necessary. Here are four tips to get the most out of these products:



1. Target aggregation sites. Aggregation sites tend to be areas of a room less disturbed and away from light, such as voids, cracks or crevices. These sites are key targets for application of residual insecticides.
2. Rotate classes for resistance management. It's important to use different products with different modes of action for long-term resistance management. Not many different modes of action are available, so a rotation among classes is recommended to help avoid insecticide resistance in the long term. For example, try rotating pyrethroids (such as Demand CS insecticide with iCAP technology), neonicotinoids and pyrroles (chlorfenapyr).
3. Use advanced formulations. Formulation of the insecticide is essential to ensuring bedbugs pick up the active when crossing a treated surface. Complex microcap formulations enhance the probability of a bedbug picking up a lethal dose of insecticide.
4. Be thorough. To be effective, applications of insecticides — whether a liquid, foam or dust — must be thorough. It's recommended you have your application equipment present while inspecting, and every time you find evidence of bedbugs make the application to the hiding place immediately. Remember to look up and down when inspecting and treating; bedbugs will use any harborage, whether at floor or ceiling level.