



smartsolutions



bed bugs

BASF Pest Control Solutions
The Evolution of Better Pest Control



The Chemical Company

The Problem with Bed Bugs

Few pests pose control challenges as complex as bed bugs. Hard to find, persistent, and increasingly pervasive, bed bugs require considerable professional expertise, and significant client cooperation.

As if that weren't enough, research has shown that bed bug strains showing resistance to pyrethroid insecticides are now widespread throughout the United States. Factor in the repellency-related problems associated with pyrethroids and it's clear a smarter approach to controlling bed bugs is sorely needed.

The SmartSolution for Bed Bugs

The SmartSolution for Bed Bugs from BASF Pest Control Solutions is based on the latest research, the Prescription Treatment® IPM approach, and new, effective strategies utilizing breakthrough materials with significant advantages over residual pyrethroids.

This guide is dedicated to discussing the strategy and treatment aspects of controlling bed bugs using a foundation of non-pyrethroid products.

A Non-pyrethroid Foundation

Traditionally, pyrethroids provided a quick knockdown of bed bugs. In the past, they have been valued for their repellency and widespread use. However, bed bugs have made pyrethroids as a stand-alone solution ineffective.

In fact, control failures using pyrethroids might actually be a result of the occurrence of resistant strains. Genetically conferred resistance, which then shows resistance to the same class of chemicals, involves all pyrethroids.

Table 1: Pyrethroid Resistance



Field Samples With >10x P

The nonrepellent product, Bed Bugs from BASF, on the *indication of resistance* name implies, they do not can. This is important pyrethroid treatments can abandon nesting pyrethroid-treated are

University of Kentucky given a choice between pyrethroid-free harbors

*Dini Miller, Department of Entomology, Jerome Goddard, Department of Entomology

Controlling Active Bed Bug Infestations

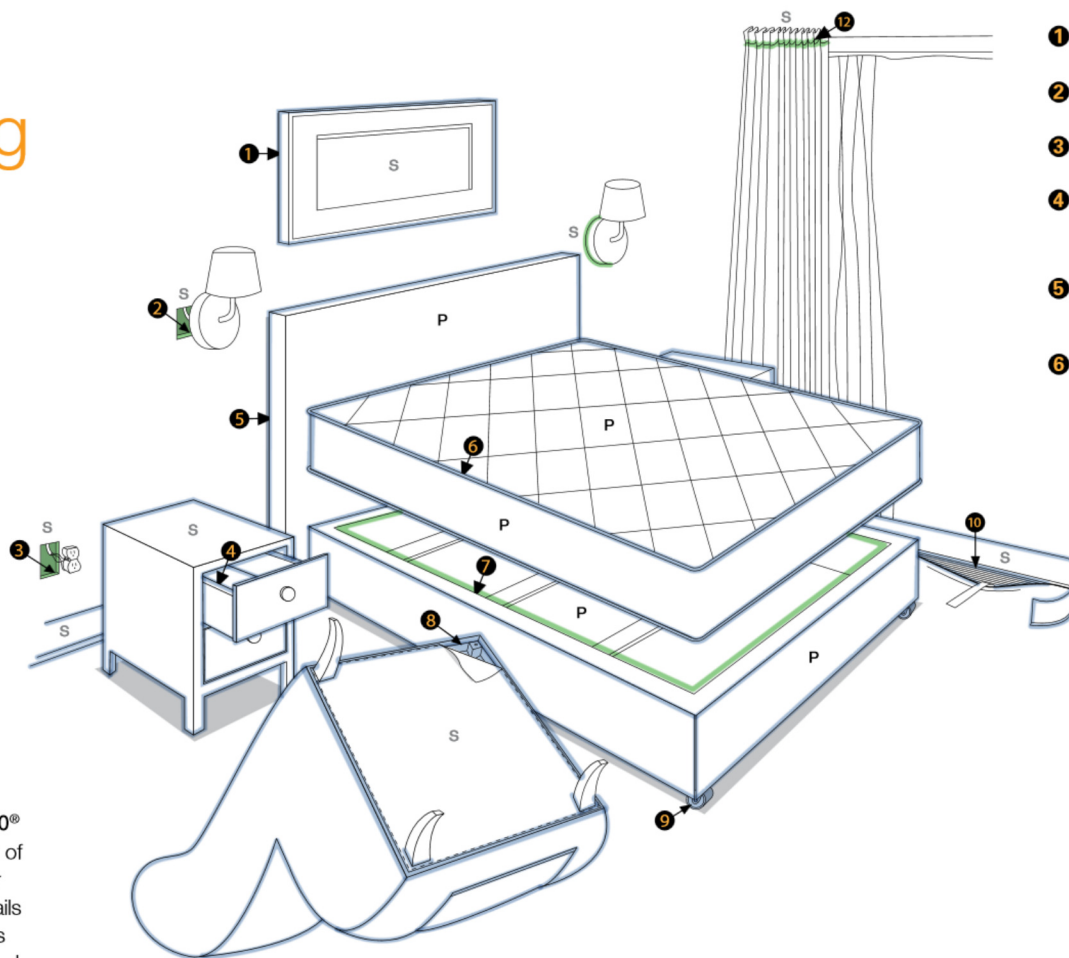
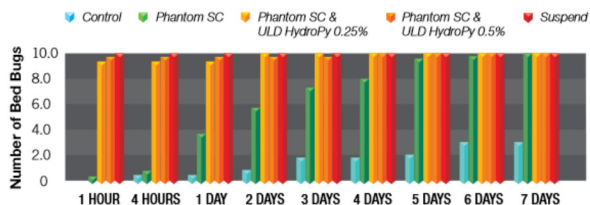
Eliminate Exposed Bed Bugs

Vacuuming and other mechanical means of quickly killing and removing exposed bed bugs are recommended as a first step toward controlling an infestation. Focus on accessible harborages and areas disturbed during preparation where bed bugs may have scattered. Nymphs are very small and eggs nearly invisible, so complete reliance on these methods to physically remove all bed bugs is not realistic.

A directed contact treatment for quick reduction of bed bug populations is necessary in most situations where bed bugs are found, especially in complex harborages where the mechanical methods are less effective. A tank mix of **Phantom®** termiticide-insecticide and Prescription Treatment® brand **ULD® HydroPy-300®** Pyrethrin Concentrate provides quick knockdown of bed bugs. Treating and neutralizing eggs wherever bed bugs are found is also very important. This entails application of an insecticide to exposed bed bugs within a localized area. To ensure that resistance and repellency will not sabotage your control efforts, the smartest approach is to start with a nonrepellent foundation using **Phantom** termiticide-insecticide and/or Prescription Treatment® brand **Phantom®** Pressurized Insecticide.

Figure 1:

Bed Bug Mortality After Topical Treatment-Lab-Reared



P Primary Treatment Area
S Secondary Treatment Area

To learn more BASF Proactive Bed Bug Treatment Protocol, visit: pestcontrol.basf.us/campaigns/bed-bug-proactive-program.

Treat Likely Harborages

Crack & Crevice® treatments are common around bed frames, box springs, headboards, and in cracks and crevices associated with baseboards, mouldings, carpet edging, wall fixtures, night stands, dressers, and other hard furniture. Spot treatments are common on baseboards,

undersides of dressers of other furniture that b near aggregation sites o and **Phantom** Pressuriz for spot and Crack & C respective residual action

Void treatments are app insects may live, hide, o bed frames, platforms, v Dusts provide excellent voids and other harbora brand **Alpine®** Dust Inse for bed bugs, and its F dinotefuran, makes it i

*Dinotefuran, the nonrepellent active ing Reduced Risk status for public health u

The BASF Proactive Bed Bug Treatment Protocol

The cost to the hospitality industry of having rooms with bed bug infestations is enormous. By utilizing the BASF Proactive Bed Bug Treatment Protocol, steps can now be taken to prepare a room for the event of bed bug infestations in a way that significantly reduces the likelihood that a bed bug infestation will take hold and spread.

When weighing cost and time commitment involved in the treatment of bed bugs, BASF believes it is important to consider the value proactive treatments can present to customers in the hospitality industry, and other accounts like public transportation, movie theatres, and health care, to name a few.

Achieving proactive success requires insecticides with sufficient residual activity to give reliable results. Multiple classes of chemistry are also important to avoid the problems associated with resistance.

Initial hotel case-study data shows that protocol—utilizing nonrepellent Prescription Treatment® brand **Phantom**® Pressurized Insecticide, **Phantom**® termiticide-insecticide, and Prescription Treatment® brand **Alpine**® Dust Insecticide—can successfully stop the spread of bed bugs.

Phantom Pressurized Insecticide, **Phantom** termiticide-insecticide, and **Alpine** Dust Insecticide are nonrepellent and effective on both pyrethroid susceptible and resistant strains, including pyrethroid-resistant bed bugs. They also utilize three different chemical modes of action to help avoid the development of resistance.

By treating primary bed bug colonization areas twice a year and secondary initiation areas annually (see diagram on page 4), BASF believes existing or future bed bugs will be killed and additional reproduction and reinfestation can be controlled.

For complete information on the BASF Proactive Bed Bug Treatment Protocol, visit: pestcontrol.basf.us/campaigns/bed-bug-proactive-program.

Figure 2:

Average Cumulative Percent Mortality for Four Strains of Bed Bugs Exposed to Fresh Dry Residues of Phantom 0.5% and Residues Aged Four Months.

Alvaro Romero, Kenneth F. Haynes, University of Kentucky.

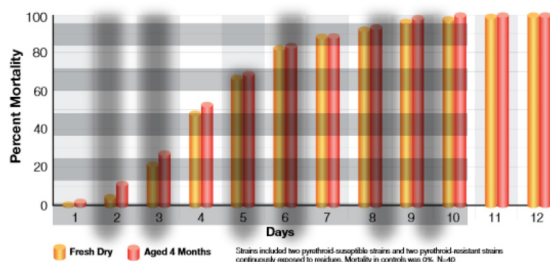
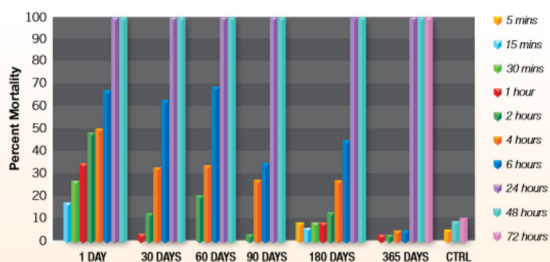


Figure 3:

Alpine Dust Insecticide Research

Bed Bugs (*Cimex lectularius*)



Insect Investigations, Ltd. 2007

Research from the University of Kentucky shows dry deposits of Phantom termiticide-insecticide aged 4 months kill bed bugs just as quickly as fresh dry deposits (Figure 2). In another study, Alpine Dust Insecticide was shown to kill bed bugs one year after application (Figure 3).



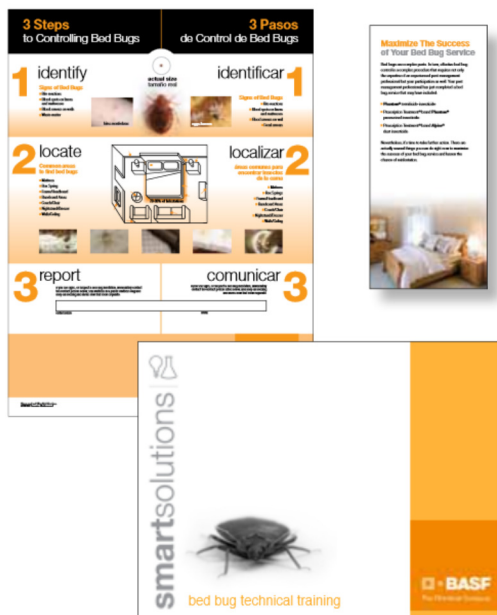
Smart Support

As always, BASF Pest Control Solutions is committed to giving you everything you need to tackle your toughest pest control challenges—not just in terms of products, but in terms of expertise and support as well.

You can always find helpful information, training, marketing support, and more at PestControl.basf.us. Log on and download brochures, customer cooperation aids, and treatment scenarios to help you better understand and prepare for this challenging pest.

Get Smarter

This SmartSolution for Bed Bugs is just one of many planned BASF SmartSolutions to address the pest control challenges and issues that have the greatest impact on our industry and the success of your business. To inquire about additional SmartSolutions for **ants, German cockroaches, flies, fleas, occasional invaders, rodents or termites**, contact your BASF Pest Control Solutions sales representative.



The Prescription Treatment® Approach

BASF Pest Control Solutions believes a sound *Integrated Pest Management* strategy is the cornerstone of successful pest control and good stewardship. Our five-step *Prescription Treatment* approach includes the core IPM practices you should always employ in conjunction with any BASF SmartSolution.

- 1 Inspect** to gather the information that leads to good decisions.
- 2 Prescribe** a treatment strategy to achieve specific goals in the account.
- 3 Communicate** with the client to promote cooperation, establish expectations, and convey value.
- 4 Treat** using effective techniques and materials that support the strategy.
- 5 Follow up** to assess results.

Always read and follow label directions.

www.PestControl.basf.us

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