

## The Past, Present and Future of Bed Bug Control

The fight between bed bugs and humans has persisted since pretty much the beginning of recorded human history, or at least till the age of the oldest fossilized bed bug 3,500 years ago. Bed bugs are winning but we haven't given up. In the past, we used a combo of heat, good furniture choices, and housekeeping practices to keep them at bay (and, yes, some other questionable practices). Pesticides came into play in the late 1940s with success until bed bugs started to evolve resistance. Now, scientists experiment with the next best thing for the future such as synthetic kidney bean leaves (the spines under their leaves can stop bed bugs in their tracks), hair thin fibers to make webs for traps, bed bug poop scented lures, and even testing drugs that we can take to kill the bugs after a bite (FYI, not likely). However, the most promising tools still come from the past. One such "old" tool showing promise is silica gel, a dust that dries out (desiccates) critters and other things, too.

A recent study<sup>1</sup> found silica gel better at treating for bed bugs than many of the other pesticide formulas available. The silica gel product CimeXa<sup>2</sup> proved far superior to diatomaceous earth (a desiccating dust) and, Temprid SC<sup>3</sup>, a synthetic pesticide product. And, as a bonus, silica gel's amorphous shape makes it safer for human health than other dusts with crystal-type shapes. We routinely add silica gel to food and pharmaceuticals and the EPA labels it as "generally considered safe." The gel (which is actually a dust) works best when applied into the cracks and crevices where bed bugs often hide. The dust absorbs the waxy outer coating of the bed bug that it needs to retain water causing the bug to die from dehydration. Combined with common sense housekeeping, silica gel provides a new option to the market that controls bed bugs without harming humans.

<sup>1</sup> Potter, MF et al., PCT Magazine, August 2014

<sup>2</sup> CimeXa is a desiccant silica gel dust manufactured by Rockwell Labs.

<sup>3</sup> Temprid SC has the active ingredients cyfluthrin + imidocloprid manufactured by Bayer Environmental Science.

## More about Silica Gel

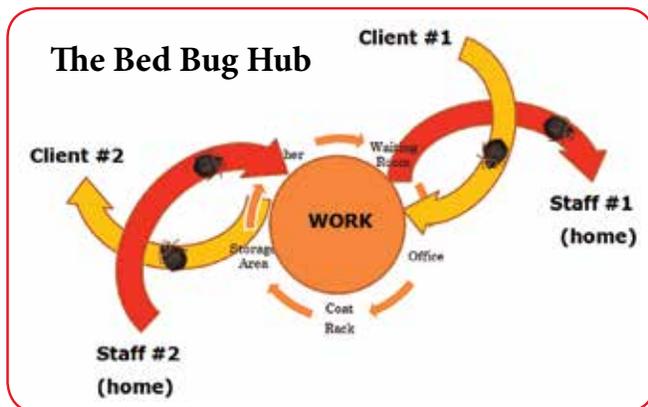
Here are the silica gel basics and why you should add it to your bed bug control toolbox.

- It works better in the real world than other dusts.
- It is virtually non-toxic to humans if used as directed.
- It killed bed bugs with 100% effectiveness in field trial.
- It does not have a problem with bed bug resistance like other pesticides (at least not yet).
- It works by removing the waxy coating from the bed bug and drying them out.
- It just needs to get on the bug to work, not inside it.
- It works best using ultra-light dustings in cracks and crevices such as baseboard and in wall voids.
- It can be used preventatively and will remain active to kill introduced bed bugs for some time.

Silica gel offers a relatively inexpensive, possibly preventative approach for bed bug control. Because bed bugs travel between apartments through wall openings and down common hallways, a "pre-treatment" with an ultra-light dusting of silica gel may help to slow the spread of a bed bug problem.

## Bed Bug Hubs: Protection at Work

No one wants to bring work home. Yes, that paperwork is tedious but what about when your work involves going into other people's homes, seeing clients, or maintaining a residential building? Then bringing your work home might mean bringing an unwanted hitchhiker or two, and I don't mean one with thumbs.



Many workplaces act as bed bug hubs: places where bed bugs circulate from workplace, to workers' homes, to clients' homes and back again.

### Workplaces can do a few things to break this cycle:

#### Workers:

1. Bring as little into clients' homes as possible and bring it in a hard plastic or metal container - bed bugs can't climb well on slippery surfaces.
2. Avoid sitting on upholstered furniture - sit on wood or metal furniture.
3. Bring a change of clothes/shoes to work: seal work clothes in plastic until placing them in a hot dryer for at least 20 minutes - heat drying kills bed bugs in all stages of growth.
4. Check the beds in your home often for signs of bed bugs - take action quickly if you find signs of or live bed bugs.

#### Workplaces:

1. Know the risks to employees.
2. Create policies and protocol to minimize those risks.
3. Provide education to employees on bed bugs, related bed bug policies, and protection.
4. Provide resources for protection such as access to hot dryers, sealed storage, a place to change and/or protective clothing.

Putting in place good workplace management practices and worker protections will put an end to the bed bug hub.

## Bed Bug Q&A

**Question:** Does boric acid work for killing bed bugs?

**Answer:** No. Boric acid is a dust that bugs must eat to work. Since bed bugs don't eat anything but blood, boric acid applied to cracks and crevices (or elsewhere) never gets inside the bed bug.

## Resources

Here are a few useful places to go for more bed bug information:

- U. of Minnesota, Let's Beat the Bed Bug website, [bit.ly/UNMbeatbb](http://bit.ly/UNMbeatbb). Best of the site: the multi-lingual resources found at <http://www.bedbugs.umn.edu/resources/>.
- U. of Virginia, bed bug factsheets, [bit.ly/UVirgBB](http://bit.ly/UVirgBB). Best of the site: Non-Chemical Bed Bug Control (<http://bit.ly/UVnonchem>).
- U. of Cornell, StopPests, <http://bit.ly/StopPestsbb>.

## Training Opportunities:

Midwest Pesticide Action Center is offering FREE webinars and live training on bed bugs all summer long, across the city. Currently scheduled events:

- **Webinars in July & August**
- **Live train the trainer August 5**

Go to <http://bit.ly/MPACEvents> for more information.