

## **Bed Bugs - The natural way to get rid of them**

Bed bugs are on many peoples minds. Folks who have them don't want to talk about them. They think there is a stigma around having them and there is. Believe me, anyone can get them and if you live some place like New York, I understand you have a 10% chance of getting them. You can keep a super clean and tidy house and still you can acquire bed bugs. They seem to be invading every nook and cranny of society.

In the summer of 2010 I had a visitor to my home that left me with bed bugs from their luggage. They were in a couple of my rooms before I realized I had them in the house. I knew nothing about them. I did not recognize their bites at first. Even as a physician I had never seen a bed bug bite. I did know it was an unusual bite and although none of my dermatology books showed the bite, I quickly found it on the internet. I still did not have any idea what to do about them once I realized I had them in my house. I got a very quick education. I spent every spare moment researching how to eradicate them without making my home a toxic war zone. There were many people selling non-toxic products to kill bed bugs but I could not find any information or research to give me the comfort of knowing they were going to work the way I needed. I did not want to loose precious time using something that did not work and allow the bed bugs to keep proliferating. They can increase their numbers quickly and the best thing is to get them while you have a light infestation. One of the products called Cedarcide looked more promising than other nontoxics. It had been used on sand fleas by the army and there was some research showing it killed bed bugs on contact. However, since it was a spray, I would need to spray it on them to kill them on contact. This was unlikely as they were hiding and I could not find the proof that it would kill them later when they came out and walked on the dry spray. Since they hide from sprays, getting the spray on them would be difficult and I chose not to use this product. Finally, after much research I decided everything available on the market was too toxic or was not proven. So I decided to use diatomaceous earth (DE). I had two hundred pounds of DE in my barn as I use it to keep mites off my chickens and carpenter ants out of the house. I have used it on a variety of bugs and know it is great at drying out their bodies and desiccating them quickly. I searched the internet for research or testimonials on the use of DE. It did appear that some people had used it for bed bugs and said it worked great. It also appeared that some of the pest control companies were using it and mentioned it was one of the few things that the bugs did not build up resistance to. It made sense to me since you can put it everywhere and when the bug walks over it, they will pick it up on their skeleton and it will dehydrate them and they will die.

After doing a lot of reading, I sent for some things to help me with bed bug control besides the DE. I sent for bed encasements as well as bed bug interceptors and a pest pistol. I also purchased a bed bug catcher as well as downloaded plans to build one.

The bed encasement is like a big pillowcase that fits over your mattress or box spring. An encasement is put around a mattress and/or box spring to imprison the bed bugs inside the encasement. You leave it on the bed for a year during which time the bugs caught inside die. I found a website where they had researched the different brands of

encasements for how well they worked. Some companies sold encasements that did not really keep the bugs inside all the time. The one I purchased was excellent at keeping them in and not letting any bugs out. It cost more but I decided it was well worth the money. These encasements can be purchased at Amazon.com (see banner below) or U.S. Bedbugs.com but be sure to only get the brand of encasement I mention below.

The bed bug interceptors are plastic cup like items that you place under your bed legs or furniture legs to keep bedbugs from climbing up your bed or sofa etc. It catches them and you can find them to dispose of their bodies. It is also a method that allows you to see how many you have in the environment still. You can get them in regular sized or large for odd shaped couch or bed legs. I liked the idea that no more bed bugs would be able to get on my bed and that I could catch them as they tried to crawl onto furniture or beds. It turned out I did not really need them as the DE had killed all the critters. I had a very light infestation and my first placement of DE seemed to do the trick. However, I did not know they were all dead and continued to put out DE and use interceptors etc for a month after they were actually dead. I was so freaked out about the whole experience and had what I would call post traumatic stress disorder for months after the bed bugs were gone.

I ordered a bed bug trap initially and even built my own when I did not catch any. I thought perhaps it was not a good trap and found directions for building one that used dry ice. The one I built necessitated my purchasing dry ice every few days and I found the purchased machine easier to use but much more expensive. I think the dry ice home made machine is a great idea and the price is fantastic but getting that dry ice continually sure can be a problem when you live in the country.

No bed bugs were caught in either trap, but that was because I had already killed them with the DE and did not yet realize they were gone until I could not trap any. I think that both the purchased trap as well as my home-made trap would have worked but I just did not have any bugs any more. Both traps have been researched and they both work on the idea of putting out carbon dioxide. We humans exhale carbon dioxide and bed bugs are attracted to it. This is why the carbon dioxide traps are ingenious and have worked for many people. The bug is attracted to the trap by the carbon dioxide and once there they can't get out. Some exterminators use these traps to monitor for bed bugs in hotels so they will know when to treat for them.

The pest pistol was a cheap little plastic devise that I could put the DE into and it acts as a method to disperse the DE into cracks and crevices. I had been using a plastic pipette prior to it being delivered and the pest pistol really made it so much easier. It works best to use it with the accordion part pointing upward. I put DE into every light and extension outlet since bed bugs are known to travel through the walls and are thought to follow electrical wires. I also put it at the bottom of every wall in my house and behind or on top of molding. I even put it in and on furniture. I probably did not ever have any in the furniture in my living room and did not need to do this but as I said, I was freaked out over the whole situation and I went ballistic.

I ordered all these items by 3rd day air, but I could not wait for the mattress and box spring encasements as my bed had bugs in it now and I was sleeping in it. (Really creepy.) You can't just move to another room as they will follow you. You need to stay put so they don't move all over your house before you can kill them. I had been bit about 24 times the night before and I am extremely reactive to their bites. I examined all the places on my mattress that bed bugs hide on beds. I used a magnifying glass and looked for bugs and eggs in the seams of my mattress and the box spring as well as the buttons on the top of the mattress. They appeared to be hiding in the buttons and nowhere else. I took the DE and put some in each button. I smeared it into the area real well. Then to be safe I put it on all the seams. Even though the boxspring seemed to be fine, there was a small cut in the box spring fabric that could have allowed them access. I took the box spring cover off and looked inside to be sure there were no bed bugs there. I saw nothing there. For now I would ignore the box spring, but I had an encasement on order that I would put around it just to be sure. I don't think I was bit at all after applying the DE to the bed but I had so many bites already that I was not completely sure if I had been bit again or not.

I want to make sure you realize that although I think DE is the least toxic method available to get rid of bed bugs, it can be harmful to your lungs if breathed in, so wear a mask when placing it out and be sure it is not in the air when you take the mask off. You don't need to put a lot out. You can apply it to areas very thinly. In fact if you make it too thick they won't walk over it and won't get it on them. They will try to go around it. Of course if they are caught in a corner they will eventually die from a lack of food or be forced to go through it. However, they won't die any time soon. Be aware they have been known to live for as much as 18 months. Usually, they will die within a year, but some have been found to live for 18 months. Wow, is all I have to say. Scarey! So back to the DE. The pest pistol or some other similar device is useful to apply it as they will apply only a thin layer. You really only want a thin layer applied. It has to remain dry to work. If it gets moist it will no longer dry out the bed bugs. If it does get moist, clean it up and reapply dry DE. On my bed I carefully smeared it into all the mattress buttons and along all the seams on the mattress and box spring. I only thought they were in the buttons, but I wanted to cover all their favorite hiding spots just in case I had missed them. They are most commonly found in the buttons and any ribbing or sewn areas of the mattress.

That night I did not get one bite. However, I awoke at least 20 times and turned the light on and examined my body thinking I was getting bit. Plus I was still itching like crazy from the old bites. By the way, peppermint essential oil is the best thing to use for most types of itchy bites and worked better than anything else I tried for bed bug bites. It is my old stand by for mosquito bites and all manner of itchiness. I used so much at one point that I was worried about neurotoxicity from an overdose of the essential oil. That did not happen luckily. It took me a full two months after they were gone to quit imagining something was biting me at night. Over time that craziness goes away.

Bed bugs feed for a long time. It takes them 5-12 minutes to get their full blood meal. Therefore, they feed around 4-5 AM when we are in our deepest sleep so we won't be as

likely to notice and swat them. They have two tubes they use to feed. One tube puts an anesthetic into the area and the other puts an anticoagulant in and sucks the blood. You can see these two holes. If you don't see them, get out your magnifying glass. My bites swelled up enormously and the holes were very evident due to the swelling. The interesting thing about the bites is that some people do not react at all and don't know bed bugs are feeding on them while other people react quite intensely. People who don't react can have hundreds or even thousands of bedbugs under and around their bed or house without knowing it. The elderly are known for not reacting. One of the interesting things I noted with being bit was that it created a fever in my body. I would awake some time right after being bit with a fever and throw all my covers off from the heat and the itching. I was bit for about ten days – two weeks before I realized the problem and killed the bugs. The interesting thing after this bed bug fever therapy was that I actually felt energized from it. My body temperature had been slowly getting lower and I had been lacking energy and thought I was becoming hypothyroid again. (I was hypothyroid in the past.) I am sure I was headed that way again, but the bed bugs seemed to have reversed that situation. So, I do have to be thankful to them for that. It would have taken me 1-2 months to turn my thyroid around and it took them less than two weeks. Spirit works in really bizarre ways.

By the way bed bugs are starting to become pesticide resistant. So if you use pesticides. They may or may not work depending on the pesticide and if the bug is resistant to it. It is unlikely that they will become resistant to DE. Due to the way it works it seems impossible for that to happen. If you do decide to go for pesticides watch out for foggers. They can chase the bedbugs into the cracks where it is harder to treat them. Even a natural fogger such as cedarwood can chase them into the cracks. If they are hiding in the walls it is hard to kill them and they will move to new rooms.(I don't discuss Cedarwood here as I can't find enough people supporting it and too many that say it is not working for them.)

Some more data on DE. When applying it always wear a mask and keep it on until the dust settles. Apply it thinly. If you vacuum it up it will eventually clog the bag and you end up using up a lot of bags. It may clog your vacuum although I did not have that happen. I was sweeping (with a mask) and then vacuuming afterward. I had a fire going during this time and it was dry in my house so I did not have trouble with moisture. If your DE gets moist it will not work. I was able to keep the DE down for a couple months. Yes, it did look strange at my house, but no one was visiting during the time anyway. If you have bed bugs **DO NOT ALLOW VISITORS IN YOUR DOORS**. You don't want to spread them. If you have a heavy infestation be really careful. I suggest washing and drying your clothes and putting them on from the drier as you are leaving your house. Don't take handbags or anything with you that could move them to your car or elsewhere. To kill them on clothing and bedding it is best to wash the item and dry it all the way to dry on hot and then at least 20 minutes more. I went for 30 minutes to be sure. I have seen universities list as low as 5 minutes to do the trick, but not everyone agrees with them. If you have something delicate skip the wash and just put it in the dryer on high for 20-30 minutes. Some dryers have a shelf that keeps the item from being turned and you could even put shoes in there with a shelf. There are also machines such

as PackTite that will heat up a chamber to kill them on books etc. These are expensive units though. The PackTite heating device can heat items as large as a suitcase. If you had a major infestation this might be worthwhile. Companies that sell bed bug supplies usually sell these. You can use well sealed large plastic bags to keep your clean clothing, bedding etc. in once it is bedbug free. If you don't, bugs can get into them after you wash your linen and clothing.

Steam cleaners are often used by non-chemical companies to steam kill the bed bugs on furniture. You can get a steam cleaner too if you wish. They range from \$250 to extremely expensive.

A word on apartments: The problem with living in an apartment is that you can exterminate the bed bugs in your apartment and the folks next to you still have bed bugs, so the little critters will return from your neighbors living area to your home in the near future. Whole apartment buildings need to be treated all at one time.

How I would go about the actual process if I had them again: Clean all your linen and clothing by washing in hot water and drying as described above. One way to keep things from shrinking so much is to dry normally and then dry on high for 20 minutes after the items are already dry. Put the linen and clothing into a sealed plastic bag. You can find these on Amazon.com

Put the bags in the center of each room being cleaned in a pile. You can also put things inside an unused bath tub. Bed bugs have trouble climbing up slick shiny surfaces and don't usually go inside bath tubs as they simply can't get into it. However, if you had a bad infestation they might crawl over the tub on the ceiling and drop in. Ick! Do something with non-washable belongings in your rooms that are contaminated. I only had them in two rooms and they seemed to be only in the beds so I did not clean up the belongings in other rooms. They need to be bagged for a year or steamed or heated with a Pack Tite to be sure you are free of the bed bugs. You could leave them and just dust them with DE if it is something that is dustable.

Put bed bug interceptors on the legs of all beds and furniture in questionable rooms. (Bed bugs will only go into them if someone is in the bed or on the furniture. So someone needs to continue sleeping in the bed or sitting on the furniture.) If you get bit and nothing is caught in the interceptor, that means the bug was already on the piece of furniture. If it tries to crawl off it will get caught in the interceptor but why would it crawl off if it is getting meals? You will definitely catch any bugs crawling up onto the bed in the interceptor. Make sure you follow the directions that come with the interceptor.

Also put encasements on pillows, mattresses and box springs in infested rooms. (remember you can't leave the room and sleep in a different room as if you do, the bugs will follow. You have to keep sleeping in the same room. Another ick!) "Protect a Bed" encasement is the one I suggest. You can get it at amazon too. You need to get the correct size for your bed. Pillow encasements are also necessary.

Additionally, I would use one of the home built or purchased bed bug catchers that put out CO2 as it allows you to monitor if you have any of them in a particular room that you are not in at night as well as monitoring the room you are sleeping in.

Lastly I would put DE (while wearing a mask) all over the rooms I have bed bugs in. No need to put it on the bed if I use the encasements and interceptors but I would put them on there if waiting for the encasement to come and could not wait that long. It is best not to put it on your bed like I did, but sometimes you just can't wait. The reason is you will be breathing some of it in at night and it is hard on your lungs. I would put it around the perimeter of the room, beneath and on top of the molding. In all cracks and crevices in the walls. I have worked on my electrical so I was comfortable taking the light switches and plug ins off and putting DE in there, but would caution others not to do this themselves if unused to working with electrical outlets. I also put DE around my bed prior to getting the interceptors but removed it when the interceptors arrived as I wanted bed bugs to approach the bed so they would get caught in the interceptors. Of course I had already killed them with DE when I put the powder all over my bed, so did not catch any in the interceptors. A pest pistol is very useful to apply the DE. It really makes a huge difference.

What if a person decides to use chemical sprays? They could spray just the rooms infected (be careful as it might chase the bugs into other rooms.) or they could spray the whole house. They could also use a fogger. Foggers will often chase the bugs deeper into the walls so some experts say not to use them. Spot spraying the areas that bed bugs live in seems to be more relevant. Using a monitoring device will help you know where they are at.

When you spray or fog, the bugs that don't get sprayed will just hide deeper in the wall or wherever they can find a hiding space to get away from the spray. They may travel to an unsprayed room. Most of the chemical sprays do continue working for months. Many of them such as Gentrol don't just kill the bugs, but work through hormonal control of the bed bug, cause them to be infertile. This stops them from laying eggs. Now, I would wonder how that would effect us hormonally too. So, if you insist on using this type of spray, I suggest you close the door to all sprayed rooms and do not open that door again for a few months. I am concerned that any spray that will kill bedbugs or control their egg laying ability and lasts for months after sprayed, will also effect humans for months possibly. Best to stay out of any room you spray such chemicals in. Keep your animals out of them too. You can spot spray rooms only if you have a very light infestation. This happens in the very beginning of an infestation when there are very few bugs. Later when you get a major infestation you would have trouble spot spraying rooms since the bugs would be everywhere. You would just chase bugs into other areas. If you do spot spray rooms, I suggest you put DE on the other side of all the walls adjoining that room, door openings etc to make sure the bugs do not exit the room via the molding, outlets or doorways. Remember to cover the whole doorway, not just the bottom of the door.

I am going to give you links to places I got good information from or places I purchased items. When I purchased items last year, you could not get most of them from Amazon. Now you can. So if you want to get everything in one place, click on the amazon banner. Additionally if you decide to buy from Amazon and you go there from this banner, a small percent of the sale will come back to my farm which is very helpful since I don't get paid to write these blogs. However, I have listed other places besides Amazon that you can purchase these items from below also. I have additionally listed links to specific items above to get you to the item in one click. Some items such as bed encasements you will need to view on Amazon to see which size will fit your bed.

- What the bed bugs and their eggs look like so you can ID them.

<http://www.bed-bugs-handbook.com/bed-bugs-pictures.html>

- What bed bug bites look like.

<http://www.bed-bugs-handbook.com/bed-bugs-bite.html>

- Where you can buy a pest pistol.

This is the cheapest spot to purchase it. You can get it through Amazon.com too.

<http://amzn.to/2f2d3m8>

- Where you can buy a mattress and box spring encasement that works. The research proves it works and I can attest to it also. These can also be purchased at Amazon.com by clicking on the link above.

(the company that they originate from)

<http://bit.ly/protect-a-bed-cover>

- Where you can purchase bed bug interceptors.

<http://bedbugs.bed-bugs-handbook.com/bedbugs.php?offer=climbup>

- Where you can purchase a bed bug monitor and catcher.

<http://bit.ly/trapsandmonitors>

- Directions to make your own bed bug catcher real cheap.

<http://lancaster.unl.edu/pest/bugs.shtml>

<http://blog.lib.umn.edu/efans/ygnews/2010/02/new-do-it-yourself-bed-bug-mon.html>

[http://abclocal.go.com/wabc/story?section=news/7\\_on\\_your\\_side&id=7212643](http://abclocal.go.com/wabc/story?section=news/7_on_your_side&id=7212643)

- If you are a tenant, who pays for bedbug treatment?

<http://bedbugger.com/faqs/legalissues/>

A great site from the University of Nebraska

<http://lancaster.unl.edu/pest/resources/bedbug263.shtml>

Here is a site that has a lot of useful information

<http://www.bed-bugs-handbook.com/>

Here is a site that has some great products. They have really done their homework to provide some products that I think are helpful. You will notice they are mentioned a few times above as they have some great products.

<http://bit.ly/bed-bug-supply-kits>