

# Do-It-Yourself Bed Bug Trap

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In the last decade, we've seen a resurgence of bed bugs in the United States. Bed bugs aren't just an "American" problem — people all over the world are dealing with more bed bug problems.

Before treatments are done, it's important to make sure bed bugs are present. Inspections require removing bed linens, turning over mattresses and box springs, looking for bed bug droppings, and bed bugs themselves.

An easier method of finding bed bugs has been developed by Dr. Changlu Wang, a research entomologist from Rutgers University. This homemade trap is simple to make. It is also inexpensive. His research lab has compared it with some high-priced traps, and they found it worked very well.

This trap will catch more bed bugs if nobody is sleeping in the bed, but some bed bugs will be caught even if someone is sleeping in the bed or on the sofa. If there is a very small infestation, it may take several nights to catch bed bugs. The larger the infestation, the more bed bugs will be caught. This trap is useful in determining if bed bugs are present, but probably won't catch all the bed bugs present. It should not be used solely as a method of control. Only one trap per room should be used.

## What You Need for This Trap

To make this trap, you'll need:

- A plastic pet dish. Look for a divided pet dish with flat bottom food bowls. (I paid \$2.78.)
- A 1/3–1/2-gallon cooler/thermos. You'll need one that is insulated well and has a spout on the top. (\$6.99 for a 1/2-gallon cooler)
- Talcum powder (baby powder). Scented or unscented, it doesn't matter. Before you buy, check the label to make sure it is talcum baby powder, not cornstarch baby powder. (\$1.73)
- A small paint brush, make-up brush or cotton ball. I used an old make-up brush.
- Some fabric. I cut up one of my husband's old shirts, which worked great.
- Glue. I used Elmer's™, because I already had it. You can also use masking tape.
- Dry ice in cubes. Look in the

Yellow Pages for suppliers. This is the last step. You'll need to prepare the trap before you get dry ice. In Lincoln, the local vendor sells dry ice in 5 lb. bags for \$4.28)

Before you start, remove the plastic label from the pet dish. Turn the dish upside down and look at it. This inverted pet dish is going to be your trap. At night, the bed bugs are going to crawl up the sides of the inverted pet dish and fall down into the trough that surrounds the two round flat areas. The thermos containing dry ice is going to sit in the middle of the inverted pet dish straddling the flat areas.

Because the outside of the plastic pet dish is too slippery for bed bugs to climb up, you must provide traction to help them out. Cut strips of fabric and glue them to the sides of the dog dish, or use masking tape to completely cover the edges. Make sure you cover the entire side from top to bottom. Let the glue dry several hours or overnight. If any glue dripped on the inside of the trap, you'll need to clean it off. Make sure there are no small spaces for bed bugs to hide under.

My total cost for this trap (buying one 5 lb. bag of dry ice) was \$15.78 plus sales tax.

## Setting the Trap

Directions:

1. Use a brush or cotton ball and coat a very, very thin layer of talcum powder on the bottom of the grooves. A dusting is all that is needed. The talcum powder insures the bed bugs won't be able to crawl up the sides and get out of the trap.
2. Take the thermos or a styro-foam cooler to your dry ice supplier and buy dry ice. Dry ice is very cold and it will burn your skin, so don't touch it. If you accidentally spill some, use gloves to pick it up.
3. When dry ice warms up, it turns to carbon dioxide gas (CO<sub>2</sub>) and pressure will build up inside the container. Screw the thermos lid on tightly, but open the spout just a little bit to release the pressure.
4. Assemble the trap. Put the inverted pet dish near the bed or sofa you think might be infested. Place the thermos on the flat areas. Make sure it does not touch the front or back of the pet dish. At bedtime or about 9 or 10 p.m., open the thermos spout all the way to

release the carbon dioxide.

5. In the morning, remove the thermos and look to see if you have caught any bed bugs. Adult bed bugs are 1/4-inch and easy to see. This trap will also catch the tiniest bed bugs that are about this size of a pinhead. They will be pinkish colored and hard to see. This is why you want only a very thin layer of talcum powder in the bottom of the trap. If you find bed bugs, you can put the pet dish in the freezer for a few hours to kill the bed bugs. If using this trap in more than one location, take precautions to avoid moving bed bugs to other locations by freezing the trap several hours before reusing it. A double pet dish will fit into a jumbo-size plastic food storage bag.

In the morning, there probably won't be much dry ice left. If you want to reuse this trap the next night, you will need more dry ice. Reapply a dusting of talcum powder before using.

## Why Does this Trap Work?

Bed bugs are attracted to CO<sub>2</sub>, given off as the dry ice warms up. The CO<sub>2</sub> escapes the thermos through the spout at the top. Because CO<sub>2</sub> is heavier than air, it will flow down the thermos and concentrate in the bottom of the trap and near the floor. Carbon dioxide will not replace oxygen so it is not hazardous to people or pets. It is carbon monoxide (CO) that is dangerous. According to Dr. Changlu Wang, the CO<sub>2</sub> given off by a 1/3-gallon trap will be about the same as two people breathing.

Note: In the winter, I had a hard time finding one-half gallon plastic insulated thermos jugs. At one store, I bought a Rubbermaid™ water cooler. When I tested the Rubbermaid™ water cooler, I found a small amount of water had accumulated overnight in the trough of the inverted pet dish. Because it wasn't insulated very well, water condensed on the bottom of the Rubbermaid™ cooler and dripped into the trap. The trap still caught bed bugs, but a well-insulated thermos will work better.

## FOR MORE INFORMATION

For these directions in a print-friendly format and other bed bug resources, go to <http://lanaster.unl.edu/pest/bugs.shtml>



The items needed to make this trap are easy to find and only cost around \$15.



Place the insulated container on the inverted pet food dish, near the bed. Use only one trap per room.

## Bed Bugs Walking

Some insects, like house flies, seem to defy gravity by walking on windows or even upside down. They can do this because they have tarsal pads which are sticky enough to overcome gravitational forces.

Bed bugs do not have tarsal pads. But, they do have tarsal claws that allow them to dig into surfaces.

Catherine Loudon, a researcher at University of California–Irvine, studied how bed bugs walk on different surfaces. She videotaped bed bugs as they ran across wood, glass, fibrous tape, painted surfaces, and plastics. She slowed the tape and was able to see how bed bugs walked on the different surfaces.

She found when they walked on wood and fibrous tape, bed bugs showed normal insect walking, without any slipping. But, when bed bugs were placed on plastic surfaces, she found bed bugs slipped with every step, even when walking horizontally. On painted and glass surfaces, bed bugs showed an intermediate level of slipping and less synchronized walking.

This study shows why bed bugs can't get out of the plastic pet dish. Even without the talcum powder, this trap will still probably work, but the talcum powder makes the plastic surface even more slippery.



Use glue or masking tape to attach fabric to the outsides of the pet food dish.



Use a small brush or cotton ball to apply a very thin dusting of talcum powder to the trap.



In the morning, bed bugs will be found in the bottom of the trap.