

How to Make an Insect Kill Jar



Insect kill jars are an essential piece of equipment for anyone making an insect collection and allow the collector to quickly and easily dispatch the insects they find in the field. While it is possible to make a very simple jar that contains only a paper towel soaked in a killing agent, it is nice to have a more permanent jar so you're not getting the fluids all over your bugs. You can buy pre-made jars from entomological supply companies such as Bioquip (bioquip.com), but they're cheap and easy to make yourself!

I use different jars and different chemicals depending on the age of the people I am going to work with. The set of instructions presented here are for children 12 and older and adults. Instructions for adapting the jars for safe use by younger children are included in the notes section at the end.



Things You'll Need:

- large wide-mouth jar with a one-piece metal lid (pasta sauce jars are perfect!)
- plaster of paris (about 1/2 cup - available at craft supply stores , online, and sometimes at Target or Wal-Mart type stores)
- water
- disposable cup
- disposable spoon or knife
- paper towel
- killing agent (more about this below)

To make the jar:

To make the jar easy to see into, it's best to remove the label if your jar has one. Soak the jar in warm water for about 30 minutes to soften the label, then peel it off and scrub away any leftover adhesive. Wash and dry the jar.



Working quickly, mix the plaster of paris and water in the disposable cup using the disposable spoon or knife. Follow the directions on the plaster package or use about 1.5 parts plaster to 1 part liquid. I've found that using very wet plaster makes better jars than using thick plaster because it traps air inside the plaster and makes it more porous, but it does take longer to dry. I usually start with about 1/2 cup of plaster and add water, stirring gently, until the plaster is rather runny and pourable, about 1/4 cup.



Carefully pour plaster into the jar until the plaster is about 1/2 inch deep. If you get plaster on the sides or top of the jar, wipe it off as soon as possible if you don't want it to remain there permanently.



Allow plaster to dry. If your plaster package says you can microwave it, you can speed the drying time by microwaving for one minute and allowing it to cool, then microwaving and cooling two more times or until dry.

Dribble your killing fluid into the jar and allow it to soak into the plaster. Depending on how thick your plaster was when you poured it, this may take some time. There are several options for killing fluids. See the notes below for more information to help you choose the fluid that's right for you and the amounts you might want to use.



After the killing agent has soaked into the plaster, add a paper towel, a tissue, or a small wad of toilet paper to your jar. This gives the insects a place to hide and helps keep them from eating one another or beating against one another inside the jar as they expire.



Use your kill jar! Check <http://dragonflywoman.wordpress.com> and click on Educational Materials for instructions for using your new jar (coming soon!).

Notes:

Killing agents

There are several different fluids you can use as your killing agent. The one currently favored by entomologists is ethyl acetate. It kills insects very quickly without having to use a ton of fluid. However, it is also mildly toxic (don't breathe it in if you can help it) and not readily available in local stores. If you wish to use ethyl acetate, you can purchase a big bottle of it from scientific supply companies such

Fisher Scientific (fishersci.com) or VWR (vwr.com). It's expensive though (about \$350 for a 4L bottle), so if you only need a small amount, purchasing it from Bioquip (bioquip.com) is a lot cheaper. They sell it in a little squeeze cap bottle that is easy to use and won't break the bank. Note that ethyl acetate is a solvent and it can strip color off of some surfaces. It's best to keep the ethyl acetate off your insects if possible, so let the fluid completely soak into the plaster before you use the jar if possible. It won't discolor most insects, but it can discolor some of them.

There are other options for killing agents that are more readily available. Acetone-free nail polish remover is mostly ethyl acetate and works fairly well, though a bit more slowly than pure ethyl acetate. It is also somewhat toxic due to the chemical mixture and may discolor some of your insects. Rubbing alcohol will also work, though you will need to use a lot more of it to make it work (a few tablespoons as opposed to a half teaspoon to a teaspoon of ethyl acetate or nail polish remover) and it also takes longer to kill your insects. The latter may be problematic for some people, especially children, because the insects struggle for much longer before they die. It also allows the insects time to thrash around inside the jar as they die, which can destroy delicate parts. On the plus side, rubbing alcohol is relatively safe to use, very inexpensive, and available almost everywhere. I've bought it from tiny little general stores in towns of less than 100 people!

Bioquip has other killing agents available, but I have not used them and can't comment on how well they work.

Making jars for children

Glass and small children don't mix. Ethyl acetate and small children also don't mix. If you want to create jars for use with small kids, here's how to make them safe for use.

First, use a plastic jar with a screw top rather than a glass jar. You can buy these from grocery stores, stores like Target and Wal-Mart, and kitchen supply stores. They're often available at craft stores as well. Plastic containers don't break as easily as glass when you drop them and are less harmful if they do, so they're better options for use with children.

If using a plastic jar, you can't use ethyl acetate because it will disintegrate the plastic over time. Besides, it's better if kids aren't sniffing ethyl acetate (you know there's a kid in every group that does this sort of thing!). With kids, I prefer to use rubbing alcohol. It doesn't work as quickly as a killing agent, but it won't destroy a plastic jar and it's much safer for use with children.

Recharging your jar

All of the killing agents I suggested are volatile and they evaporate a little every time you open the lid of your jar. Thus, you will need to recharge your jar often to keep it working at peak capacity. I recharge mine before every trip by adding more killing agent to the jar. If you use your jar for several hours, you might need an additional recharge. If you know you're going to be out for more than a few hours, bring some extra killing agent with you and recharge your jar in the field.

Produced October 2010 by C. L. Goforth. For this and other insect collecting tutorials, please visit <http://dragonflywoman.wordpress.com> and click on Educational Materials.