



CREATE A

BURLESE FUNNEL

AT-HOME FUNNEL TRAP WILL SHOW YOU LIFE IN THE SOIL

Healthy soil is alive with millions of organisms. These organisms can be divided into six groups: bacteria, fungi, protozoa, nematodes, arthropods, and earthworms.

Soil organisms prefer cool, dark, and moist environments. The Berlese funnel trap works by exposing the soil organisms to heat and light, and they are driven into the trap. Many soil organisms are too small to see with the unaided eye and are much easier to identify once they are isolated in a collection jar. Some organisms like earthworms and larger arthropods can be identified with the unaided eye and removed from the sample prior to using the Berlese funnel trap.

The funnel can be made from a simple desk lamp (with an incandescent bulb) and a plastic pop bottle. Because soil organisms prefer a cold, dark, and moist environment, they try to escape when exposed to the heat, light, and dryness created when a lamp shines directly on the soil. They move down in the funnel and fall into the collection fluid below.

MATERIALS

- Empty 2-liter plastic pop bottle
- Scissors
- Optional: Tape and a small 2-5 oz plastic or paper cup
- Ethanol (rubbing alcohol) or water and dish soap
- ¼" hardware cloth or similar screen material
- Optional: cheese cloth
- Soil sample - about 2 cups
- Desk lamp with 40-60 watt incandescent bulb

INSTRUCTIONS

- Carefully cut the 2-liter bottle in half, about 6 inches from the bottom.
- Optional: Tape the small paper or plastic cup in the center of the bottom section of the pop bottle. This option will concentrate your sample in a smaller amount of collection fluid and make sorting it easier.
- Fill the bottom section of the pop bottle or cup with either ethanol (rubbing alcohol) or water with a few drops of soap. Ethanol will preserve the insects and other organisms that are collected for a longer period of time, but if you are going to look at your sample shortly after collection and do not want long term storage of the sample, then water and soap are adequate.
- Cut a circle of hardware screen a little bit larger than the neck of the inverted top and lay it inside the neck of the bottle.
- Gather soil from your yard, garden, or field. If you want to keep your sample as clean as possible and easier to observe, place the soil in a single thickness of cheesecloth.
- Place the soil sample on top of the screen in the funnel. Do this before you place the top half in the bottom half to keep your sample as clean as possible.
- Place the top half of the bottle into the bottom half to form a funnel leading into the collection fluid.
- Position the desk lamp closely over the funnel so that the light warms the surface of the soil. To escape the heat and light, the organisms will crawl out of the soil at the bottom of the funnel and fall into the container below.
- To collect the most organisms, leave the sample under the light for at least 24 hours.



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