

8 Natural & Homemade Insecticides to Save Your Garden Without Killing the Earth

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These natural and DIY pesticides are effective at helping to rid your crops of harmful critters, but safe enough to keep from poisoning you and your family.

There's nothing like having a home garden to make you begin to appreciate the trials and tribulations of the farmers who grow our food. Between weather, weeds, and insects, not to mention the challenges of soil fertility, it can be an incredibly humbling experience to try to put food on the table with a home garden – especially when adhering to organic protocols that don't rely on quick, yet potentially harmful, solutions, such as herbicides, pesticides, and conventional fertilizers. We've written previously about [homemade herbicides](#), which can help you get a handle on noxious or invasive weeds without as much labor as hand-weeding, and this time around, we're taking aim at insect pests, which have the potential to turn your formerly lush garden into their own insect all-you-can-eat buffet.

When it comes to keeping your crops healthy in the face of massive quantities of plant-munching insects, there are a number of approaches that can help turn the tide in favor of your

own harvests, and while removing insects by hand is one time-tested method, it can also be incredibly challenging to do so, or can be too little too late. Another, far less time-intensive method of knocking back insect populations is by applying natural or homemade insecticides, which can reduce their numbers or eliminate them all together. Not all insects are harmful, so applying insecticides indiscriminately, especially harsh pesticides that affect even the beneficial insects, can have a detrimental effect on your local garden ecosystem.

[N.B.: Just because these are 'natural' or homemade insecticides, that doesn't imply that they couldn't harm your soil, your garden, or your person. An insecticide is defined as "a substance used to kill insects," and as such, they have the potential to "significantly alter ecosystems" and can be toxic to humans and other animals, so before going all out with any pesticide or insecticide, be sure to do your homework and choose the most effective, least harmful (to you and your garden) option.]

8 Natural and homemade insecticides

1. Oil spray insecticide

A homemade insecticide made from vegetable oil mixed with a mild soap (such as Dr. Bronners castile soap) can have a devastating effect on certain troublesome insects, such as aphids, mites, thrips, etc. To make a basic oil spray insecticide, mix 1 cup of vegetable oil with 1 tablespoon of soap (cover and shake thoroughly), and then when ready to apply, add 2 teaspoons of the oil spray mix with 1 quart of water, shake thoroughly, and spray directly on the surfaces of the plants which are being affected by the little pests. The oil coats the bodies of the insects, effectively suffocating them, as it blocks the pores through which they breathe.

2. Soap spray insecticide

A very similar homemade pesticide to the oil spray is a soap spray, which is also effective for controlling mites, aphids, whiteflies, beetles, and other hungry little insects. To make a basic soap spray insecticide, mix 1 1/2 teaspoons of a mild liquid soap (such as castile soap) with 1 quart of water, and spray the mixture directly on the infected surfaces of the plants. A soap spray insecticide works in a similar fashion as an oil spray pesticide, and can be applied as necessary (though it is always recommended to NOT apply it during the hot sunny part of the day, but rather in the evenings or early mornings).

3. Neem oil insecticide

An oil extracted from the seeds of the neem tree is a powerful natural insecticide, capable of disrupting the life cycle of insects at all stages (adult, larvae, and egg), making it a great resource for the organic gardener. Neem oil acts as a hormone disruptor and as an "antifeedant" for insects that feed on leaves and other plant parts. Neem oil is biodegradable and is nontoxic to pets, birds, fish, and other wildlife, and is effective against a variety of common garden insect pests, as well as being a natural fungicide that can [combat powder mildew and other fungal infections on plants](#). It can be found at many garden stores or natural foods markets. To use neem oil as an insecticide, either follow the instructions on the bottle, or start out with a basic mixture of 2 teaspoons neem oil and 1 teaspoon of mild liquid soap shaken thoroughly with 1 quart of

water, and then sprayed on the affected plant foliage. Neem oil can also be used preventatively by spraying the leaves of plants that are often ravaged by pests, before they're actually infested.

4. Diatomaceous earth as a natural pesticide

This natural substance with a somewhat unwieldy name is made from a sedimentary rock created by fossilized algae (diatoms), and which is a rather abundant resource ([diatomaceous earth is said to make up 26% of the earth's crust by weight](#)). Diatomaceous earth has a number of uses in and around the home, and acting as a natural insecticide is just one of them. This material works not by poisoning or smothering the insects, but instead by virtue of its abrasive qualities and its affinity for absorbing the lipids (a waxy substance) from insects' exoskeleton, which then dehydrates them to death. Diatomaceous earth is often available at garden stores, although many times only in large bags, so if you've got a small yard, consider splitting it with a neighbor. To apply, simply dust the ground around your plants, or even sprinkle it on the foliage, where it will help control snails and slugs as well as other crawling insects. Due to its dried nature, in order to be an effective natural pesticide, diatomaceous earth needs to be reapplied after every rain.

5. Garlic insecticide spray

Garlic is well-known for its pungent aroma, which is delectable to some and yet repellent to others, and it is this strong scent that comes into play when used as a natural insecticide. Actually, it's not really clear if garlic spray and chile spray (below) are actually insecticides or are more likely insect repellents, but either way, these common kitchen ingredients can be used to knock down, or even knock out, insect infestations in the garden. To make a basic garlic spray, take 2 whole bulbs (not just 2 cloves) and puree them in a blender or food processor with a small amount of water. quart of water. Let the mixture sit overnight, then strain it into a quart jar, adding 1/2 cup of vegetable oil (optional), 1 teaspoon of mild liquid soap, and enough water to fill the jar. To use this homemade insecticide, use 1 cup of mixture with 1 quart of water and spray liberally on infested plants.

6. Chile pepper insecticide spray

Similar to garlic spray, chile pepper spray is a great homemade natural insect repellent that can be used for a variety of different pests. Chile spray can be made from either fresh hot peppers or chile pepper powder. To make a basic chile spray from pepper powder, mix 1 tablespoon of chile powder with 1 quart of water and several drops of mild liquid soap. This mixture can be used full-strength on the leaves of affected plants. To make chile spray from fresh chile peppers, blend or puree 1/2 cup of peppers with 1 cup of water, then add 1 quart of water and bring to a boil. Let sit until cooled, then strain out the chile material, add several drops of liquid soap to it and spray as desired. *[Caution: Hot chile peppers can be very potent on humans as well, so be sure to wear gloves when handling them, and keep any sprays made from them away from eyes, nose, and mouth.]*

7. All-in-one homemade insecticide spray

From the folks at [Rodale's Organic Life](#) comes this all-in-one DIY natural insecticide, which is said to be a combination of many different recipes submitted by readers. To make it, puree 1 bulb of garlic and 1 small onion, add 1 teaspoon of cayenne pepper powder and let steep for an

hour. Strain the mixture and add 1 tablespoon of liquid soap and mix well. To apply this homemade insecticide, spray it full-strength onto both the upper surface of the leaves, as well as the undersides, and store the remainder in the refrigerator for up to a week if desired.

8. Tomato leaf as a natural insecticide

I have to admit that this one is new to me, but I've seen enough [mentions of it](#) now to warrant its inclusion here as a natural pesticide. Tomato plants are part of the nightshade family, and as such, contain alkaloids such as the aptly named "tomatine," which can effectively control aphids and other insects. To make tomato leaf spray for a natural insecticide, chop 2 cups of fresh tomato leaves (which can be taken from the bottom part of the plant) into 1 quart of water, and let steep overnight. Strain out the plant material and spray onto plant foliage.

Make, use, and observe, then modify

Although there are many more natural pesticides available, such as Bt (a soil microbe toxic to certain insects), [milky spore](#) (also a microbe), nicotine (extracted as a tea from bulk tobacco), pyrethrum (derived from a variety of daisy), and iron phosphate (a natural mineral toxic to slugs and snails), the above natural and homemade insecticide recipes should give you a good starting point for creating your own version. Every organic gardener seems to have their own particular blend and ratio of ingredients, so by paying close attention to the effects of a specific recipe, it's possible to modify it to best suit your own insect battles.

Just remember, killing off all of the insects in your garden is not the desired result here, as any healthy ecosystem requires an abundance of beneficial insects, microbes, and fungi, both in the soil and on the plants themselves, so introducing other predatory insects (ladybugs, praying mantis, etc.) or creating good habitat for them, as well as building soil fertility, can also be an effective pest management approach.
