

## Controlling Pests with Home Remedies

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Home Remedy. def. *A treatment or cure for a disease or other ailment that employs certain foods or other common household items. Home remedies may or may not have actual medicinal properties that serve to treat or cure the disease or ailment in question; many are merely used as a result of tradition or habit or because they are quite effective in inducing the placebo effect.* (Wikipedia).

It seems universal for people to have heard about or used a home remedy to prevent or control insects. Some examples:

- The lady who used baking powder for ants coming into the house after hearing someone mention it on a radio show and then called the extension office because it wasn't working. **There is no evidence baking powder or baking soda has an adverse effect against insects.**
- The pest control guy who told me you could kill moles and gophers with Wrigley's Juicy Fruit gum, by putting it in their holes. The theory is the varmints eat the gum which gummed up their intestines (or constipated them) then they died. **There is no evidence that moles and/or gophers would even eat gum or have any adverse effects from it.**
- The mom who used mayonnaise on her child's hair for head lice and became frustrated her daughter continued to have recurrent lice infestations. **A research study at the University of Miami School debunked several home remedies for head lice. The researcher found live lice after infested children slept overnight with mayonnaise, petroleum jelly or olive oil in their hair.**
- The homemaker who puts bay leaves, orange peels or sprinkles herbs and spices in cupboards to keep cockroaches away. **These herbs and spices don't repel roaches.**
- Using mothballs to keep rabbits, snakes and other critters away. **There have been no studies showing mothballs (naphthalene) have any effect on wildlife.**

### Grain of Truth

While some old wives tales are completely off-base (i.e., baking powder, baking soda, Juicy Fruit gum), for others, there is

often a tiny grain of truth.

Throughout history, people have noticed some plants seem to be immune to insect feeding. Scientists have isolated substances in these plants which repel or even kill insects. Some examples:

- Research at Iowa State University has shown German cockroaches don't like to walk on surfaces treated with nepetalactone which is the extract of catnip. But, researchers also found catnip plants themselves did not repel insects in houses or other buildings.
- Similar studies with osage orange (also known as hedge apples) extracts showed concentrated extracts were repellent, but not the fruits themselves.
- Pyrethrins are natural insecticides produced by some species of the chrysanthemum plant. Flowers of the plant are either dried and powdered or the oils within the flowers are extracted with solvents. Natural pyrethrins quickly penetrate the insect's nervous system and, shortly after exposure, the insect cannot move or fly away. But, a "knockdown dose" does not mean a killing dose because enzymes in the insect quickly detoxify the chemical and the insect will recover. To delay the enzyme action and increase the lethal effect of the pyrethrin, another insecticide or synergist is usually added to the pyrethrins. Because of the short term nature of pyrethrins, scientists have developed longer-lasting chemicals structur-

ally similar to pyrethrins, called pyrethroids. These pyrethroids include permethrin and most of the common over-the-counter insecticides used today.

Other botanical insecticides include:

- Rotenone, dried derris root, used in gardens, food crops and to kill fish in lakes and ponds.
- Sabadilla, the powdered ripe seeds of a South American lily, used to kill ectoparasites on domestic animals and humans.
- Azadirachtin, an insect-growth regulator, derived from the neem tree. It interferes with the insect molting hormone ecdysone.
- Limonene is derived from citrus peels. It is used to repel or kill mosquitoes, cockroaches, silverfish and some external pests of pets. It is relatively nontoxic.

### Using Botanical Insecticides Safely

Some people believe natural insecticides are safer than synthetic ones. This isn't necessarily true. Nicotine, from tobacco leaves, is a very old and dangerous "natural" insecticide. Black Leaf 40 was a popular garden product for many years, but its use was curtailed by the EPA, because it was so toxic.

The toxicity of each insecticide is based on the characteristics itself. Concentrated insecticides, whether natural or synthetic, can be hazardous to the applicator. Be sure to read and follow label directions for safe use.

### More Home Remedies Debunked

It would be great if we could control insects around the house simply by mixing up a few ingredients from the cupboard and sprinkling the concoction around the kitchen. Unfortunately, it just isn't that easy.

**Mint oil.** One study conducted at the University of California found commercial products containing 8 percent and 4 percent mint oil did not repel ants. The researcher put pieces of hotdogs in cups treated with mint oil products and left them near ant colonies. Four hours after treatment, the number of ants on the treated and untreated cups was statistically the same.

**Vinegar and lemon juice.** Vinegar and lemon juice are recommended for all sorts of household cleaning chores, but they aren't good insecticides. Another study at the University of California showed vinegar and lemon juice were also ineffective at repelling insects.

**Bleach (sodium hypochlorite) and ammonia.** These household cleaning products may mask ant trails, but there's no long lasting residual insecticidal effect from their use.

**Chalk Line.** And finally, a chalk line will not deter ants from coming into a structure.

### What Does Work: Boric Acid and Borates

Boric acid is a mineral-based inorganic pesticide derived from the element boron. It is relatively nontoxic to people and pets, although people should take care not to inhale it. As an insecticide, boric acid acts as a stomach poison interfering with the insect's metabolism. The dry powder also abrades the exoskeleton and helps to desiccate the insects.

**Ant control.** Boric acid has been formulated into slow-acting bait products for sweet-loving ants. These are cheap to buy and readily available for homeowners to purchase. The key to using an ant bait successfully is to have ants feed liberally on the liquid bait. Place the bait where you see ants. Don't use insecticides which prevent the ants from taking the bait back to the colony. Replace the bait if it dries up. Leave the bait out as long as you see ants feeding on it. If ants don't feed on the bait, it won't work.



The key to using an ant bait successfully is to have ants feed liberally on the liquid bait.

For grease ants, a homemade bait using peanut butter, honey and boric acid may work. Try mixing 4 tablespoons peanut butter, 6 tablespoons honey and 3/4 teaspoon boric acid. Remember, if the ants won't feed on it, the bait won't work.

**Cockroach Control.** There are a lot of boric acid products on the market for cockroach control, including dusts, baits and pastes. After walking through boric acid dust, cockroaches ingest the powder when they groom themselves. This works both as a slow acting stomach poison and also may desiccate the cockroach. Baits are effective, but should be used in conjunction with other method of control.

A homemade concoction can be made using equal parts flour, sugar and boric acid, with a little bit of milk to make a paste. Boric acid should not be applied so it will fall into food or onto food preparation areas. Do not allow children to eat any homemade boric acid baits. Apply near areas where cockroaches hide.

**Termites.** There are several professional-use borate products used as a wood treatment for termites. Application of these products to untreated wood surfaces provide long-term preventative protection against many wood destroying organisms, including subterranean termites, wood boring beetles, carpenter ants and wood decaying fungi. The effectiveness of these products comes from their ability to diffuse deep into wood fibers, protecting the centers of large pieces of wood.

Borate products cannot be used as soil termiticides, sprayed on the soil surface or applied to wood mulch. These products will have a limited lifespan if the borate-treated wood comes in contact with soil because the boron will diffuse out of the wood when in contact with moisture.

## Protect Stored Winter Clothing from Insect Damage

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As spring and summer approaches, it's important to properly store wool clothing and blankets to protect them from insect damage. Carpet beetles and clothes moth larvae are the only insects that can digest keratin, a protein in hair and wool which makes these

insects important fabric pests.

During the summer, woolen clothing is susceptible to damage because that's when these insects are most active. These insects like to be in hidden places and can hide in the folds of clothing hanging in a closet.

Most people think about clothes moths as being the insect that damages fabrics, but, in Nebraska, the most common

fabric pests are carpet beetles. Adult carpet beetles are small and oval, have knobbed antennae and scales or hairs present on their body. Damage is not done by the adult beetle, but by the larvae, which are small, hairy and cigar shaped. Some of these beetle larvae are also found in flour, spices and grain-based food items.

Soiled clothing is more likely to be damaged by insects,

so wash or dry-clean clothing before storage. Store clothing and blankets in a dark, cool, well-ventilated place such as a dark closet. Attics are too warm, basements are musty and garages are easily accessible to insects.

Store clothing in air-tight containers such as plastic tubs, plastic sweater boxes. A cedar chest is not air tight and may not repel these insects.

There are two types of repellents used to repel clothes moths and carpet beetles: paradichlorobenzene and naphthalene. Paradichlorobenzene is more effective because it actually kills insects and isn't just a repellent. It may be necessary to replace moth crystals as they dissipate throughout the storage period.