



# A Guide to Mites



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Alameda County Department of Environmental Health

## Mites

Mites are Arachnids, in the same group as ticks and spiders. Adult mites have eight legs and are very small, sometimes microscopic, in size. They are a very diverse group of arthropods and can be found in just about any habitat. Mites are scavengers, predators, or parasites of plants, insects and animals. Some can transmit diseases, cause agricultural losses, affect honey bee colonies, or cause dermatitis and allergies in humans. However, the majority of mites goes unnoticed and have no direct effect on humans.

Some mites may bite humans causing irritation and itchy swellings. Most of them only bite humans when the normal host is unavailable such as the tropical rat mite or the bird mite. Other mites known to cause contact dermatitis include a variety of grain and mold mites. Most mold mites do not bite humans, but can be a nuisance due to the large numbers that can develop within the home. Scabies is a contagious itching disease that is caused by tiny burrowing mites that live under the skin of humans and animals (mange). This disease can spread quickly by physical contact in families, schools and nursing homes if not treated promptly.

The tropical rat mite is the most commonly reported biting mite in Alameda County. The natural host for this mite is rodents, particularly the roof rat. Eliminating rats from the property will solve the mite problem. The bite of this mite does cause severe itching and anxiety, especially in women and young children.

Our District will identify mites, conduct a site evaluation and recommend what action to take to ensure their elimination. Call or submit an online request for service today.

## Biting Mites in Homes

Several types of mites are associated with skin dermatitis in humans. The **tropical rat mite (*Ornithonyssus bacoti*)**, is one of the most commonly encountered species. This mite is a parasite of rats and inhabits the area in and around the rat's nesting area. The **tropical fowl mite (*Ornithonyssus bursa*)**, **northern fowl mite (*Ornithonyssus sylviarum*)**, and **chicken mite (*Derma-nyssus gallinae*)**, associated with domestic or wild birds, can also be found in homes.

Although none of these species are truly parasitic on humans or pets, they will readily bite humans. Some people are unaffected by the bites while others will experience itching and dermatitis (particularly women and children). The bite is normally pimple-sized that itches for up to a week. The bite mark may last as long as three weeks. The bites are often concentrated under areas where clothes constrict the body or areas such as under armpits and breasts. These bites can be extremely itchy and may cause emotional distress. Scratching may also lead to secondary bacterial infections.

The rat and bird mites are very small, approximately the size of a 12-point font period on a piece of paper. They move about quite actively and will enter the living areas of a home when their host, rats or birds, have left or have died. Heavy infestations may cause some mites to search for additional blood meals. A complete generation usually takes about two weeks to develop. Unfed females may live ten days or more after rats have been eliminated. In Alameda County, rodent mites are normally associated with the roof rat (*Rattus rattus*), but are also occasionally found on the Norway rat, (*R. norvegicus*) and house mouse (*Mus musculus*). The tropical rat mite does not vector disease.



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## Control

**The solution to a mite infestation is to eliminate their hosts, rats or birds.** The mites will survive only 2 to 3 weeks without their hosts. Rodent control including rat proofing is the permanent solution for a rodent mite infestation. Pesticide treatments may help prevent further bites from occurring but must be used in combination with bird or rodent control. Pesticides may be applied prior to or concurrently with rodent control and exclusion. Repeat treatments may be necessary depending on the pesticides used.

## Rodent Control

Inspect basements, interior, and attic for signs of rodents. Look for fecal droppings, gnawed items, cached or eaten food items (snails, nuts), and runways or pathways especially in the attic. Once a rodent infestation is confirmed, formulate a control plan.

Determining how the rats are entering your home is the most important control measure. Roof rats are agile climbers and will climb up vegetation that is in contact with the roof. Vegetation and tree branches should be trimmed away from the roof. Holes along the base of the building should be sealed as well as repairing broken foundation vents. Gaps under exterior doors should be sealed.

Eliminate any rodents that may be present. Poison baits are the easiest to use, however, there are problems associated with their use, such as dead rats in inaccessible areas, which leads to odors and flies. Rat snap traps are probably the best method to use. Do not use mouse size traps for rats. There are a number of different types of snap traps on the market. Place traps in areas of rodent activity, then check and maintain regularly. If no activity is detected in the traps after a week, start to rodent proof the structure. *(Further details are available at Rodents webpages)*

## Mite Control

Since mite control can be time-consuming and difficult, it is best to concentrate your efforts on controlling the host. Normally once the mite host is eliminated, the mite problem will be solved in 2 or 3 weeks.

Thorough vacuuming is effective in eliminating some mites and their eggs. Dispose of vacuum bag after use. An electrostatic mop (i.e. Swiffer Dry) can be

used to collect mites. Mites can also be collected on clear sticky tape when visible. Transferring the tape to a sealable plastic bag or alcohol can help with mite identification. Correct identification of the mites can help to determine the source of the mite problems.

Dusting the attic with an insecticidal dust such as Drione or Tri-Die (pyrethrum & silica gel), Deltadust (deltamethrin), or diatomaceous earth may reduce the number of mites. Dusts must remain in the attic and not filter down into living areas. Insect foggers for mites can be used in attics or other interior areas where rats may be nesting. Read the insecticide label thoroughly and follow directions.

It is best to consult a licensed pest control operator for interior pesticide treatments. Some pest control companies are unfamiliar with treating mites. Others prefer not to take on “bug bite” cases because there are other conditions, medical and environmental, which may be involved. Once the pest control professional eliminates the rodents and rodent-proof the property, applying pesticides for controlling mites, at this point, becomes optional.

Some of the grain and **mold mites (*Tyrophagus putrescentiae*)** may cause dermatitis in humans. Mold mites, though most do not bite, can cause a severe nuisance due to the large numbers that can develop. Mold mites are associated with moisture conditions and high humidity that promote mold growth on which they feed. Moisture conditions could include leaking roofs, windows, siding, condensation, poor ventilation, inadequate drainage or moldy, and damp food products. As these conditions may be difficult to identify, it is advisable to hire a professional to assess the situation. Rectifying the moisture condition will control the mite infestation. The **straw itch mite (*Pyemotes tritici*)**, one of the grain mites, feeds on insect pests associated with food products, grains or hay. In homes, finding and discarding the infested product will eliminate the infestation.

Another mite that may cause dermatitis is the **dandruff mite (*Cheyletiella spp.*)**, which are associated with pet dogs and cats. Consult a veterinarian.

If you have a mite problem, contact our District or make on-line service request. Our Biologists will conduct an on-site inspection to try and identify the mites and the source of the mite problem.



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