



Alameda County Vector Control Services District
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Biting Mites in Homes

Spiny Rat Mite (*Laelaps* sp.)

Several types of mites are associated with cases of skin dermatitis in humans. The tropical rat mite, *Ornithonyssus bacoti*, is one of the most commonly encountered species. The tropical fowl mite, *Ornithonyssus bursa*, and northern fowl mite, *Ornithonyssus sylviarum*, both associated with domestic or wild birds, can also be found in homes. The tropical rat mite is a parasite of rats and inhabit the area in and around the rat's nesting area. 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. The bite is normally pimple sized that itches for up to a week or so. The bite mark may last as long as three weeks. The bites can be randomly found on the body but often are found under areas where clothes constrict the body or areas such as under armpits and breasts. Scratching may lead to secondary bacterial infections. Fortunately rat mites do not vector disease.

Rat mites are very small, approximately the size of a period. 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 food sources. The protonymphs and females suck blood, and are often distended after feeding. A complete generation usually takes about two weeks. 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 found to the Norway rat, (*R. norvegicus*) and House mouse (*Mus musculus*). The occurrence of the rat mite has increased considerably in Alameda County causing distress and discomfort to many residents.

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. Mites cannot complete their life cycle on humans. **Rodent control including rat proofing is the permanent solution** for a rodent mite infestation. Pesticide treatments are advisable to prevent further bites from occurring but must be used in combination with bird or rodent control. Pesticides may be applied prior 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), runways or pathways especially in attic insulation. Once a rodent infestation is determined, formulate a control plan.

Of primary importance is to determine how the rats are entering your home. Roof rats are agile climbers and will climb up vegetation that is in contact with the roof. Vegetation should be trimmed away from the roof. Holes along the base of the perimeter of the structure should be sealed as well as repairing broken foundation vents. Gaps under exterior doors should be sealed. (*Alameda Co. Vector Control District will inspect property within Alameda County (excluding Fremont & Emeryville) for rodents and give recommendations for rodent proofing*)

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 impart odors throughout the house. Then come the 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 and check and maintain regularly. If no activity is detected in the traps after a week or so, start to rodent proof structure. (*Further details can be obtained from our rat brochure*).

Mite Control

Attics, commonly used by roof rats, can be dusted with an insecticidal dust such as Drione or Tri-Die (pyrethrum & silica gel), Deltadust (deltamethrin), NIC 325 (limestone) or diatomaceous earth. Dusts must remain in the attic and not filter down into living areas. Electric or hand dusters are used to apply dusts. These products are available from certain hardware shops, nurseries and over the Internet. Insect foggers can be used in attics as well. Read the insecticide label thoroughly and follow directions. Interior areas may be treated with water-based residual pesticides. Treat areas where mites may enter such as baseboards, window and door trim and casings, mouldings and around electrical outlets (**NEVER APPLY LIQUID INSECTICIDES INTO ELECTRICAL OUTLETS**). Insect foggers may be utilized in interior areas. If non-residual pesticides are used (insect foggers), or attic insulation prevents dust from distributing evenly, additional applications may be necessary. Sprays and aerosols containing the active ingredient pyrethrum kill mites on contact, though will only remain effective for at most a few days. Bifenthrin is another pesticide that is effective against many mites and retains its killing properties for longer periods. Bifenthrin can be used, according to label directions, in living areas, attics and crawl spaces. Bifenthrin is sold to consumers under the trade name Ortho Home Defense®. Isopropyl alcohol (rubbing alcohol) in a spray bottle may be sprayed on sensitive areas such as beds and furniture. This kills mites on contact but volatilizes quickly. Disinfectant cleansers may provide temporary relief when applied in cracks along baseboards, window and door trims, walls and mouldings. Thorough vacuuming is effective. Dispose of vacuum bag after use. An electrostatic mop (i.e. Swiffer Dry) can be used to collect mites.

Most people will elect to hire a pest control company. 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. A monthly contract is usually NOT necessary for the elimination of mice, rats and mites. The Pest Control Operator should know the connection between mites and rats, tell you what will be done to control the rodents and mites, how long it might take, and what guarantee will be given.

Mites can be collected on clear sticky tape when visible, placing sticky glue traps out, or collected by vacuuming with a filter such as a handkerchief or cloth material inserted into the vacuum tube. After removing the filter material, it should be transferred to a sealable plastic bag or alcohol.

There are other species of mites not associated with rodents and birds that may cause dermatitis. One of these mites is referred to as the Grain and Mold mites. 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 or moldy, damp food products. These conditions can be difficult to identify and it is advisable to hire a professional to assess the situation. Rectifying the moisture condition will control the mite infestation. Another mite is the “dandruff mite”, *Cheyletiella* spp., which are associated with pet dogs and cats.

Rodent Mites

- ?? Tropical Rat Mite – *Ornithonyssus bacoti*
- ?? Spiny Rat Mite – *Laelaps echidnina* Mite
- ?? House Mouse Mite – *Liponyssoides sanguineus*
- ?? Cheyletiellid mite – *Cheyletiella* spp. (*birds, mammals, pet dogs, cats, rabbits*)

Grain and Mold Mites

- ?? Family: Acaridae – *Acarus siro*, *Tyrophagus* sp.
- ?? Family: Glycyphagidae – *Glycyphagus domesticus*, *G. destructor*

Tropical Rat Mite and bite marks

