

Tiny Moths Indoors Are Not Uncommon

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The phone call starts out something like, "I've got these little gray moths flying around in the kitchen (or utility room or basement). I don't know where they're coming from."

This is an easy one. Almost always, these little gray moths are Indianmeal moths. But finding the source of the infestation isn't always so easy.

The female moth lays eggs on or near foodstuff. Eggs hatch into light-colored larvae feeding inside a tunnel-like case of frass and silk they web together. When they have finished feeding, mature larvae move away from the food. They eventually spin a silken cocoon in a crack or secluded place where they pupate. After a week or more, new adult moths emerge.

The worm or larval stage of this



Adult Indianmeal moths are nearly 1/2-inch long and have distinctive wing markings (magnified view above; actual size at right)



insect can feed on many different stored foods in kitchen cupboards and other places where you store seeds, flour, processed grains, dried nuts or fruit. They can even infest chocolate.

There is a seasonality to Indianmeal moth infestations. They are more common in warmer

months, but we get calls about Indianmeal moths every month of the year, because these insects breed year-round inside our warm homes.

Getting rid of Indianmeal moths means finding the source and throwing it away. Look through all grain-based foodstuff, even unopened boxes. Some overlooked foodstuff include nuts, birdseed, dried pet food and treats.

Salvage infested food by freezing it for one week or heating it in a 140 degrees F oven for 15 minutes. Store non-infested foods in the freezer or refrigerator.

Empty cupboards and vacuum thoroughly shelves holding infested items, especially cracks and crevices. Empty the vacuum bag to prevent reinfestation.

To help reduce the number of moths or to monitor your situation, it may be helpful to set out a pheromone trap, found at many hardware stores. These traps catch male moths with a synthetic sex pheromone lure.

Protect Your Pets: Prevent Fleas and Heartworms

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Make a point in April to get your pet treated with flea and heartworm preventative medications. Fleas cause dermatitis in both cats and dogs. Heartworms can be life threatening. Both can easily be prevented.

Fleas Are Making a Comeback

Flea control was made much easier for pet owners after veterinarian-prescribed animal flea treatments became available in the late 1990s. Most of these were topical applications that killed adult fleas within 24 hours. In fact, these treatments were so effective, when used correctly, environmental sprays for flea larvae were not even needed.

But, last summer the extension office had more calls from people with flea infestations. This is not just a local phenomenon. University entomologists across the U.S. have noticed the same increase. Why more fleas? Some experts believe fleas have developed resistance to products used on animals for flea control. When one chemical treatment is used exclusively, a tiny fraction of fleas are able to detoxify the treatment and survive. If the flea's ability to detoxify the chemical is genetic, its offspring are also able to detoxify the treatment. Whether fleas have become resistant to these products has not been determined.



A flea on cat

Other factors could be at play for the increased number of flea infestations. Maybe pet owners didn't apply the topical treatment correctly. It should be applied to the skin between the shoulders, after parting the fur. Maybe some pet owners stopped using flea treatments because of the expense. Other methods of treating pets for fleas, like shampoos and dips, are not as effective as topical and oral treatments. We have heard of pet owners who have shampooed treated animals, which may make the treatment less effective. Be sure to read and follow directions on the label to make sure you use the product safely and for maximum effectiveness.

The table below shows some of the most commonly used animal flea treatments. If you have been using a product for several years, it is a good idea to switch to a different

product to prevent resistance from developing.

Because fleas bite quickly after jumping on the animal, there is a window when a female flea may lay some viable eggs, so some experts recommend treating the pet's environment (carpet, bedding areas) with an insect growth regulator, like methoprene (Precor, Siphotrol) or pyriproxifen (Nylar, Archer) at the time the animal is treated. Products containing methoprene or pyriproxifen may be found at pet supply stores or veterinarian's offices. Pest control professionals also use these products.

Heartworms Spread by Mosquitoes

Pets spending any time outdoors need heartworm preventative treatments. Transmission of heartworms requires the bite of an infected mosquito, which transmits microscopic heartworms, called microfilariae to the bitten animal. Within 70 to 90 days, the microfilariae have made it through the tissues to the animal's heart, where they reproduce and live for several years. Six to seven months after the mosquito bite, they will be producing their own little microfilariae, which will get picked up by a biting mosquito.

The best defense against both fleas and heartworms is prevention. Discuss with your veterinarian which medications are best for your pet.

PRODUCT (ACTIVE INGREDIENT)	METHOD	RESEARCH RESULTS/COMMENTS
Frontline™ (fipronil)	topical	Death of fleas and ticks usually within 24 hours. Monthly application killed 97% of fleas on pet and 98% reduction of off-host life stages. May be obtained at pet supply stores.
Advantage™ (imidacloprid)	topical	Single topical application provided 95% control of fleas on cats and dogs. There was also a 98% reduction of off-host life cycle stages. May be obtained at pet supply stores.
Revolution™ (selamectin)	topical	Synthetic ivermectin. Selamectin killed 98% of fleas on dogs (36-hr) and cats (24-hr). Protected dogs for 21 days and bathing animals did not affect its effectiveness. Revolution is the only one of these medications that also prevents dog heartworms, ticks, ear mites and sarcoptic mange. It is more expensive than other treatments.
Capstar™ (nitenpyram)	oral	Same chemical class as imidacloprid (Advantage). Nitenpyram starts working within 15 minutes. Within 30 minutes, adult fleas are dislodged. All the fleas were killed within eight hours.
Program™ (lufenuron)	oral	Female fleas treated with lufenuron produce non-viable eggs. But, lufenuron does not kill adult fleas or prevent adult fleas from jumping on or biting a treated pet.

What Are Zoonoses and Why Are They Important?

Zoonoses are diseases which are naturally transmissible from vertebrate animals to humans. Many major human infectious diseases have had their origins in domestic and wild animal populations which have come into contact with humans.

You have probably heard about the animal connection between hantavirus (deer mice), West Nile virus (birds) and rabies (bats, raccoons, skunks). But, you may not know the most common communicable diseases also originated in animals, including influenza A (wild birds), measles (cattle), tuberculosis (ruminants) and hepatitis (apes).

Infectious zoonotic diseases have changed human history. Some examples include the widespread devastation of Native Americans and Pacific islanders to measles introduced by Europeans, the difficulty of the French in constructing the Panama Canal (yellow fever) and the failure of Napoleon's invasion of Russia (typhus).

People sometimes panic about zoonotic diseases reported frequently in the news. Much attention has focused on West Nile virus, Lyme disease and hantavirus, but fortunately, these diseases aren't communicable from person to person.

Avian Influenza

A greater disease threat is avian influenza, which is transmitted from wild birds to domestic birds and potentially to humans. For several years now, infectious disease experts have been concerned about the spread of a highly pathogenic avian (H5N1) virus across eastern Asia. This virus has raised concerns about a potential human pandemic because:

- it is especially virulent—there is little immunity to this virus in the human population.
- it can be transmitted from birds to mammals and, in some limited circumstances, to humans.
- like other influenza viruses, it continues to evolve. Genetic changes in the virus makes vaccine development difficult, especially with a quickly-spreading disease.
- it can be spread outside geographical boundaries by migratory birds.

The concern is justified. The last avian flu pandemic occurred in 1918 when between 20 and 50 million people were killed worldwide.

So What Does All This Mean to You?

The largest risk of contracting a zoonotic disease is for people who have high levels of exposure to infected wild animals. Some zoonotic diseases can be transmitted with animal body fluids, consumption of infected meat or indirect contact with contaminated air, water or soil. Infectious organisms of other diseases are transmitted by bites of insects or ticks. Therefore, avoiding insect bites and insect-infested areas can reduce risk. People can also reduce their exposure to zoonoses by making sure pets are vaccinated, keeping pets away from wildlife and wearing plastic gloves when handling dead animals.

There are vaccines for many of the communicable diseases which originated from animals, including measles, mumps, chickenpox, pertussis (whooping cough) and influenza. The Centers for Disease Control (CDC) recommends vaccinations to prevent these diseases.

According to the CDC, the virulent avian influenza H5N1 virus is confined to certain areas of Asia, Europe, the Near East, and Africa. Human infections resulting from direct contact with infected poultry and/or wild birds have occurred and will continue. The spread of H5N1 virus from person-to-person has been very rare, which is a good thing. If avian flu becomes transmissible, a pandemic outbreak is more likely. Fortunately, infectious disease experts will continue to monitor this potentially deadly disease.

Sources: *Origins of Major Human Infectious Diseases*. Nature. Vol. 447. 17 May 2007, CDC Web site: <http://www.cdc.gov/flu/avian/outbreaks/current.htm>