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## Filth, Fruit and Drain Flies

As it gets warmer you may notice a variety of flies present inside or around your home and school. Now is the ideal time to prepare and prevent the flies. Filth, fruit, and drain flies are scavengers and the types commonly found in homes and schools are liquid feeders with sucking and lapping mouthparts. **Filth, fruit, and drain flies** are the main flies associated with kitchens and waste areas and they can pose an indirect health threat to humans by transferring bacteria and disease-causing organisms on to human food.

**Filth flies** include many different species, the most well-known being the house fly. One of the biggest health risks associated with house flies is the fact that they reproduce in a variety of organic filth, including garbage and animal feces, then readily feed on available human food. These disease *carriers*, or “*vectors*”, shuttle bacteria around on and inside of their bodies, and only need to land briefly in order to contaminate food.

House flies are truly prolific. A single house fly female can lay 750 eggs, and can generate ten generations in a single season. That’s a lot of flies!

**Dumpsters** attract many different types of filth flies. These flies will breed and feed in the refuse, and adult flies will fly through open doors/windows seeking your food and a cool resting place. Larvae (maggots) have been found to crawl considerable distances from their breeding site just before they pupate. The pupa is a non-feeding form as the fly goes through complete metamorphosis (from maggot to fly).



Adult house fly, a common type of filth fly.  
Photograph by Jim Kalisch, University of Nebraska.

Keep **dumpster lids closed, doors shut** and make sure open windows have **tight-fitting screens**. Check exterior doors for light filtering in around the edges, and consider installing door sweeps and/or weather stripping as needed. Poorly fitting doors are among the most critical points of entry into buildings for many pests.

**Fruit flies**, also called vinegar flies, are attracted to sour and fermenting organic matter. Less than one-quarter of an (1/4) inch long, the common fruit fly originated in tropical Africa and Asia and their Latin name “*Drosophila*” literally means “lover of dew”. With the help of humans, these red-eyed flies are now found in every continent except Antarctica!

Fruit flies are strongly attracted to **over ripened or rotting fruit**, but can be associated with organic matter in drains and under antiskid mats in wet kitchen areas (dishwasher zones). The adults are also drawn to moist sugary substrates such as those found among garbage scraps, residues in aluminum cans, bottles, compost heaps, spills in pop/juice machines, and any moist, decaying, or fermenting food bits lying about. Though they pose no direct threat to people, fruit flies can transfer bacteria from the garbage right onto your half-eaten apple!



Adult fruit fly. Image courtesy of the University of Wisconsin – Madison.

Fruit flies develop very rapidly when the eggs hatch and immature flies develop into a fully reproducing adult in as little as ten days. Considering that a female fruit fly lays up to 500 eggs in a lifetime, just a couple of these tiny pests can multiply into swarms in just a few weeks. **You must eliminate their food and breeding resource to get rid of this pest.**

Below are some simple steps you can take to keep filth and fruit flies far away from your lunch plate:

1. Store fruit or other attractive food items in a refrigerator, in an airtight container, or under mesh screen food cover tents.
2. Compost bins, garbage cans, and dumpsters should have closed lids and cleaned regularly. All garbage receptacles should be located as far from building entrances as possible; otherwise, even the cleanest kitchen area can have a consistent source of flies.
3. Use good quality trash bags as bin liners, those that easily tear or split are not money savers as custodial staff will rapidly resort to double bagging to avoid a garbage spill.
4. Clean up spills immediately.
5. Avoid sugary food and drinks in carpeted areas.
6. Make sure mops are rinsed thoroughly with clean water and hung with the mop head up to allow it to dry.
7. Follow guidelines for general pest exclusion, i.e. sealing cracks, fitting door sweeps and window screens, etc. Remember that these small flies only require tiny entry points.

**Drain flies** also come in a variety of forms, but the most common in kitchens are hump-backed (Phorid) flies and moth flies (Psychodid). **Hump-backed flies** are small, yellow to tan colored flies and have a hump in their *mid-section*, or “*thorax*”, hence the nickname “hump-backed fly”. A single phorid female lays up to 500 eggs, which develop into adults in as little as 14 days. **Moth flies** are most often grey colored and easily recognized by the hairs covering their wings, body, and antennae, giving them an overall moth-like appearance. A single moth fly female lays 30-100 eggs, which can also develop into reproductive adults in only 14 days.



Adult hump-backed fly, a common drain fly.

Unlike the fruit fly, which is associated with fermenting and rotting fruit, phorid and moth flies are real lovers of the **slime layer and organic debris in drains**. They are mainly pests of kitchens, food preparation areas and health care facilities; locations where these flies can easily breed in great numbers due to the abundance of drains. Sink overflows and bathroom drains are present in nearly every building type and are often overlooked in routine cleaning. The gelatinous slime layer that develops on the inside of drain pipes is totally unaffected by boiling or bleach water!



Adult moth fly, a common drain fly.  
Photograph by Sanjay Acharya.

Both moth and phorid fly adults are no more than 1/8" long and share many similar habitats so distinguishing them can be difficult, though not always necessary. If you suspect you have one of these two pests **check your drains** first. You can do this easily by placing some duct tape over the drain hole, leaving some of the drain uncovered for an updraft to occur so the little pests can fly out. Checking the tape daily for up to three days/nights will allow time for flies to get caught on the tape and the problem drain revealed.

It's possible to have additional infestations **wherever moisture collects and organic matter is present**, such as: underneath appliances; in cracks of concrete walls and floors; in/under trash containers; in wet mops or brooms; soil of potted plants; wet areas near a leaky pipe.

Phorid flies are perhaps the most difficult to eliminate due to the great diversity of sites in which they can breed, so be persistent when searching and locating all active breeding sites. Some additional sources of organic decaying debris frequented by phorid flies include decaying meat, rotting vegetables, garbage disposals, and animal feces.

You can discover phorid and moth fly infestations and prevent new ones from occurring by:

1. Think clean, and think small! These insects rely on poor sanitation on the smallest scale.
2. Cleaning and capping off unused sewage pipes.
3. Cleaning clogged sink overflows. Use a bacterial or enzymatic drain cleaner (DF 5000 Gel for example) followed by very hot water, and manual cleaning with a very stiff brush (when food is not being prepared).
4. Clean the inside of trash containers regularly and always use a liner.
5. Fix water leaks and eliminate any other moisture problems inside as well as outside. Look for watermarks on ceiling tiles and walls. Remember: the adult flies may be in one area, but the origin of the infestation may be another place.
6. Regularly clean out roof gutters.
7. Keep mulch and bark levels in potted plants to a minimum. Don't overwater plants and don't allow water to stand in drainage pans.

Flies are very important for the process of decomposition and recycling nutrients back through the ecosystem. Although flies are beneficial to the planet, they are a threat to human health and should be monitored and appropriately managed in home, school and medical environments.

For more information on flies, please view:

[http://cals.arizona.edu/urbanipm/pest\\_press/2004/march.pdf](http://cals.arizona.edu/urbanipm/pest_press/2004/march.pdf)

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## Bed Bug Battle – We Want to Hear From You

The University of Arizona and several partnering research institutions are working to battle the bed bug resurgence in the United States. Researchers hope to determine the real impact and social cost of bed bugs, the risks to individuals and society, as well as the significant causes of infestations.

We hope you will complete an online bed bug survey. This survey asks brief questions on how bed bugs affect your life, how bed bugs cause people stress, and what people do when trying to get rid of them. This voluntary survey should take about ten minutes. The survey is available in English and Spanish. There is no compensation available for your participation. Your answers are anonymous and confidential while you contribute information that will help us battle the pesky parasites.

**Who should take this survey? Everyone!** We would like to hear from people who currently live with bed bugs, people who have dealt with them in the past, and people who have never experienced bed bugs. We are dedicated to helping community members who need it most, and sharing your experience will be extremely helpful to develop strategies to reduce the bed bug problems.

English version of Bed Bug survey: <http://www.surveymonkey.com/s/DGLQS52>

Spanish version of Bed Bug survey: <https://es.surveymonkey.com/s/F5NZXJK>

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## IPM for Schools Video Series

Learn about integrated pest management (IPM) with the California Department of Pesticide Regulation School IPM Team by watching the new Integrated Pest Management for Schools video series! These ten entertaining, short, educational videos include practical IPM tips from experts and information needed to comply with the California Healthy Schools Act. Topics covered in the video series include pest prevention in school buildings, inspecting and monitoring for pests, IPM for ants, cockroaches, gophers, and turfgrass weeds, and more.

Watch the entire video series in [English](#) (with English and Spanish closed caption option) or [en Español](#) (with embedded Spanish subtitles) at [http://apps.cdpr.ca.gov/schoolipm/managing\\_pests/video\\_series.cfm](http://apps.cdpr.ca.gov/schoolipm/managing_pests/video_series.cfm).

If you have watched any of the IPM for Schools video series please complete a short online survey: <https://www.surveymonkey.com/s/schoolipm>. Your feedback is important.

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## Indoor Air Quality (IAQ) Master Class Webinar Series Continues

As part of EPA's ongoing effort to continue the momentum to create healthy school indoor environments in all our nation's schools, they are pleased to announce the launching of a new **IAQ Master Class Webinar Series**.

At the June 2014, the School Health and Indoor Environments Leadership Development (SHIELD) Network began work on designing ten 1-hour technical core-competency web-based trainings intended to build the capacity of school district staff across the country to start, improve, or sustain an IAQ management program.

The webinars will feature technical experts, industry leaders and model school districts from the SHIELD Network. CEU's are pending and certificates of completion will be provided to all who complete the post-training evaluation.

Mark your calendar to join the Master Class Technical Webinar Series. Schedule below.

Webinar Topic	Webinar Date
Integrated Pest Management	4/16/15
Asthma Management	5/07/15
Cleaning and Maintenance	6/04/15
Materials Selection	7/16/15
Source Control	8/06/15

April 16, 2015, 1:00-2:30 p.m. Eastern / 10:00-11:30 a.m. Arizona: [Smart, Sensible and Sustainable Pest Management in Your School](#)

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## Upcoming Webinars and Events

Attend Free Sessions of the [Green Strides Webinar Series](#). View archived webinars [here](#).

The [Green Strides Webinar Series](#) provides school communities the tools to reduce their schools' environmental impact and costs; improve health and wellness; and teach effective environmental literacy, including STEM, green careers, and civic engagement.

**School IPM Webinar Series:** EPA's Center of Expertise for School IPM will host a series of webinars in the coming months on pest management topics of special interest to the school community. These monthly webinars feature presentations from experts in the field. Find information about these webinars: <http://www.epa.gov/pestwise/events/sipm-webinars.html>

May 19, 2015, 2:00-3:30 p.m. Eastern / 11:00-12:30 p.m. Arizona: [Avoiding Stinging Insects in School environments](#)

May 6, 2015, [Turf Field Day](#) at the University of Arizona Karsten Turfgrass Research Facility, 2101 E. Roger Rd, Tucson, AZ 85719

**June 5, 2015, [24<sup>th</sup> Annual Desert Horticulture Conference](#), JW Marriott Starr Pass, 3800 W Starr Pass, Tucson, AZ 85745**

The Desert Horticulture Conference is the premier annual conference for all members of the southwest green industry: landscape architects, designers, growers, retailers, contractors, maintenance personnel, suppliers, and educators. Presenting timely and research-based information relevant for designing, building, maintaining, and producing plants for urban landscapes in the arid Southwest. Please visit the website at <http://cals.arizona.edu/deserthort/>.

For more information about the EPA Schools program, visit:  
<http://www.epa.gov/schools/>

For more information about the Community IPM, visit:  
<http://www.extension.org/pages/23359/urban-integrated-pest-management-community-page>



For more information about School IPM in Arizona, visit:  
<http://cals.arizona.edu/apmc/westernschoolIPM.html>

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