

SMALL FLY MANAGEMENT TIPS AND TRICKS

Effective IPM programs for small flies include:

- **Identification**
- **Monitoring/Inspection**
- **Eliminating Conducive Conditions:**

1. Sanitation

2. Physical/Mechanical

- **Chemical Control**
- **Evaluation**

Since small flies are typically a sanitation pest, sanitation measures are the most important part of a successful IPM program.

1. Sanitation Tips

- Clean up food and drink spills promptly.
- Rinse beverage containers before placing into lined recycle bins.
- Regularly clean/treat areas where food residues can accumulate, including underneath prep counters and around kitchen equipment/fixtures.
- Check incoming produce for fruit flies. Over-ripe produce might be harboring eggs/larvae even if adults are not visible. Break down and dispose of shipping cartons immediately.
- Clean drains/traps/strainers at least twice weekly to eliminate organic residues. Carefully use a stiff, long-handled brush to cut through the biofilm scum in pipes. Use hot water to flush the pipes.



• *Bio sanitation (the use of microbial surface and drain cleaners) is the most effective way to clean in an environment with chronic moisture and organic build-up. The microbes actually digest the organic debris.*



2. Physical/Mechanical Tips

- Check for and repair plumbing leaks and sewage line leaks, and eliminate standing water from floors in food preparation areas.
- Use drain baskets or filters to capture organic materials that might clog drains. Empty them daily.
- Eliminate potential breeding sites by sealing cracks, crevices, broken tiles, and kitchen fixtures/equipment to prevent organic matter from accumulating.
- Store over-ripe produce in plastic bins in a cool storage room.
- Compost bins, garbage cans, and dumpsters should have closed, tight fitting lids, and be cleaned regularly.
- Use good quality liners for waste containers.
- Keep mop buckets clean and dry between uses. Hang mops that have been rinsed with clean water on a wall rack to dry.
- Install air or strip curtains in the exterior entrances to kitchen areas and follow guidelines for general pest exclusion (i.e. sealing cracks, fitting door sweeps and window screens, replacing weather stripping, etc.)
- Keep p-traps filled with water and/or install physical barriers in drains to prevent evaporation. This provides a physical barrier to raw sewage, sewer gas, bacteria, viruses, pests, etc.
- Place exterior trash cans, recycle bins, and dumpsters as far from entrances as possible.
- Use non-toxic fruit fly traps to capture adult fruit flies.



Small Fly Management



Stop Small Flies From Becoming Big Problems!

Increasingly, the insect pests most frequently associated with commercial kitchens, food and beverage service areas, food-processing facilities, and similar commercial accounts are small flies. In addition to being a nuisance to both customers and employees, small flies may carry pathogens as they travel from their breeding sites to food and food surfaces. Lost business, health inspector scrutiny, and employee complaints may result if they are not properly managed.

Small fly control can be a challenge. Since small flies breed inside the account and have a short life cycle, they can multiply quickly when their food sources and breeding sites are available. Even small amounts of organic debris can support a significant small fly population.

Small fly larval development sites need to be eliminated to be successful in managing the problem. These sites are often some distance away from the immediate area where adult flies are making a nuisance of themselves. If you think wintertime will give you a break from small fly problems, think again. Small flies may overrun indoor areas in large quantities during cold weather months.

A pest management program's effectiveness can be reinforced when a PMP works closely with facility management to identify and address any sites or conditions that could support small flies and other pests. This is an opportunity to build working relationships with commercial accounts by "helping customers help themselves" through education in effective, ongoing strategies to help reduce pest problems between service visits.



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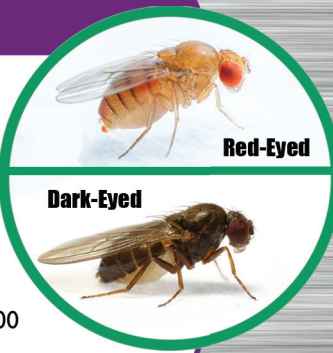
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COMMON SMALL FLIES AND THEIR FAVORITE SITES

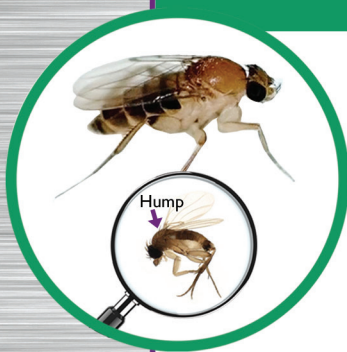
Fruit Flies (Drosophila spp.)

Overview: The fruit fly is aptly named for its attraction to the alcohol of ripened, rotting or decaying fruits and vegetables, which serve as food sources and places to lay their eggs. They also enjoy fermented items such as beer and wine. Fruit flies are drawn to food waste and moist environments, and may breed and develop in drains, garbage disposals, trash cans, and mop buckets. Any undisturbed crack, crevice or area with moisture and food can become a breeding site, so there are many sites in a typical commercial kitchen.

Description: There are two main types that cause problems. Red-eyed fruit flies are about 1/8" long, are tan/brown in color with transverse black rings across the abdomen, and red eyes. The dark-eyed fruit fly looks similar, but is larger and darker, and typically prefers a more advanced stage of rot versus the red-eyed. They multiply quickly, as females can lay as many as 500 eggs that can develop into adults in about 1 to 2 weeks.



Phorid Flies (Megaelia scalaris and those of the Phoridae family)



Overview: Phorid flies are also called "humpback flies" due to their arched thorax. They are also referred to as "scuttle flies" due to their habit of scurrying erratically across surfaces. In buildings, phorids can be found breeding in sites where moist organic matter accumulates for five days or longer, including in drains, trash containers, recycle bins, garbage disposals, rotting food, grease traps, etc. However, the most problematic infestations are generally associated with a chronic moisture problem such as from a drain leak. They are often found in large numbers in the soil around cracked sewer or drain lines. They are also associated with decaying carcasses (rodents, etc.) and are commonly found in mortuaries.

Description: Phorid flies measure 1/64" – 1/8" long, and are black, brown, or yellowish in color. They are often mistaken for gnats or fruit flies. Unlike other flies which fly away when disturbed, the first move of a phorid fly is to run erratically across the surface.

Drain (Moth) Flies (Telmatoctopus albipunctatus and those of the Psychoda spp. family)

Overview: Drain flies, also called moth flies or sewer flies, are sluggish small flies that have fine hairs on their bodies and wings, giving them a fuzzy, moth-like appearance. They typically breed in moist organic environments or where water accumulates for a week or more. Their larvae live in the biofilm in drains (the gelatinous scum which is produced by bacteria). They are also found in drain pans, loose ceramic tile where water collects, infrequently used toilets, etc.

Description: Drain flies typically measure between 1/16" – 1/4" long. They have brownish-grey bodies, lighter-colored wings and are most active at night. They are weak flyers, flying in a jerky, irregular pattern. When at rest, they hold their wings over their backs like a roof.



Small flies (and flies in general) undergo a complete metamorphosis relatively quickly. They are commonly found throughout the United States and are capable of breeding and staging in and on a wide variety of sites and food sources.

Popular breeding sites for small flies include:

- ▶ Decaying fruits and vegetables
- ▶ Cracks and crevices where food and moisture collect
- ▶ Beneath broken floor tiles and restaurant floor mats that rarely get cleaned
- ▶ Floor drains and sink drains
- ▶ Debris that accumulates in pipes, traps, sinks, drains, and under counters and equipment
- ▶ Dirty mops and brooms
- ▶ Beer and soda overflow trays and the outside of beverage lines that get sticky from overspray
- ▶ Ice machines
- ▶ Leaky pipes and stagnant water
- ▶ Recycling and trash containers

Note that food and beverage areas are not the only places with small fly infestations. More and more health/medical facilities are also battling small flies.

YOUR TREATMENT ARSENAL FOR SMALL FLIES

In addition to eliminating conducive conditions, pesticides are used to kill and control existing populations and larval development. Remember, the key management strategy for control of these flies is to focus on breeding sites. Control of adult flies with pesticides and traps will be only temporary if conducive conditions are not eliminated.

BorActin[™] insecticide powder

BorActin is a super-fine, 99% boric acid, non-repellent powder. It combats a wide range of insect pests, including small flies, cockroaches and others. It can be dusted, or diluted in water and sprayed/foamed/mopped on.

Borates need to be ingested to kill pests. That can happen by powder picked through grooming, or by treating organic debris, which turns this fly and roach food source into lethal "bait".

Mineral-based BorActin works until it is washed away. It is ideal for dust application to voids and other hidden or out of the way areas where there is chronic dampness and/or potential for food or debris to collect. Application once every 6 months should protect these areas, as long as there isn't regular water flow that might wash it away.

BorActin can be used in food facilities, even when in operation (except for serving areas).



OutLAST Pro foaming agent

OutLAST Pro is a long-lasting foaming agent. It can be combined with BorActin, EcoVia Fly Killer or other insecticides or bio sanitation products. It is an ideal choice for improved coverage/contact time and void-filling such as wall voids and drains.

EcoVia[™] botanicals Fly Killer

EcoVia Fly Killer is an innovative new insecticide for treating small and large flies filth flies at the source. When applied to organic debris or other attractive breeding sites, it will quickly kill eggs and larvae of fruit, phorid and drain flies, as well as house and blow flies, and also repel adult flies. The formula helps penetrate and loosen organic debris and also kills odor-causing bacteria. When applied straight, the thickened formula will coat the sides of drains and work quickly. For treating larger areas, EcoVia Fly Killer can be diluted with water and sprayed, foamed or mopped on. Since it is an exempt botanical, it can be applied when the facility is in operation. In addition, indoor use is not limited to crack and crevice, and there are no impervious surface restrictions for outdoor use. EcoVia Fly Killer is an excellent choice for treating dumpsters and pads.



EcoVia[™] IB insect blok

EcoVia IB Bloks are innovative insecticide blocks that are formulated with a blend of botanical insecticide oils. These Bloks are ideal for small fly control and site-specific repellency in commercial/residential accounts, and smaller enclosed spaces (electrical boxes, trash cans, etc.). EcoVia IB Bloks are EPA 25(b).



InVite[™] lures

InVite Fruit Fly Traps are food-based traps for small flies. The innovative two-part lure system is activated when the liquid is added to the powder, making them irresistible to small flies.

InVite Liquid Lure is an economical concentrated non-pesticidal attractant that can be added to traps to efficiently attract and capture small flies and yellow jackets, indoors and outdoors.

InVite Fruit Fly Lure is a food-based gel lure specifically for small flies, packaged in standard-size bait syringes. The gel can be applied to any insect glue board to help capture small flies.

