



GreenShare factsheets

University of Rhode Island Landscape Horticulture Program

Vinegar & Fruit Flies

Drosophila spp.
Diptera: Drosophilidae

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Vinegar and fruit flies often become nuisances in homes, restaurants, fruit markets, etc., especially when associated with decaying or rotting fruit and vegetables. Indoors, flies may be seen hovering around overripe fruit and vegetables, baked goods containing yeast, garbage cans and beverages such as fruit juices, cider, soft drinks, beer, wine and vinegar. A rotten fruit or vegetable, a dirty garbage receptacle, an unclean dishcloth or drain water in refrigerators can yield a heavy population of these flies very quickly. Outdoors, they become numerous during summer and autumn where fruit and vegetables are harvested, suddenly disappearing with the arrival of cold weather. Some species can serve as carriers of disease as they are attracted to human and animal excrement as well as fruits and uncooked foods.

Description:

Adult vinegar flies are about 3 to 5 mm (1/8 to 1/5 inch) long, dull brownish-yellow to brownish-black with red eyes in some species. The head and thorax are tan-colored, while the abdomen is black and gray underneath. The wings have two "breaks" in the leading edge near the body. The third antennal segment is oval or long with the outer bristle (arista) nearly always feathered. Eggs are pearly white with two to four threadlike tubes seen under magnification. Larvae are about 2 to 5 mm (1/10 to 1/5 inch) long, cream-colored, legless, eyeless and tapered to a point at the head end. Larvae have an extended stalk-like breathing tube at the tail end of the body. Pupae are about 3 mm (1/8 inch) long, brown and seedlike, with two hornlike stalks at one end.

Life Cycle:

Female flies lay about 500 eggs (up to 2,000 eggs) singly near the surface of moist, fermenting food material such as overripe fruit, rotten vegetables, dirty garbage containers, slime in drains and waste materials. Eggs hatch in 24 to 30 hours into tiny larvae that feed near the surface of fermenting food masses. Larvae feed principally on the yeast in the fermenting fluids for five to six days and crawl to drier portions of the food or even out of it to pupate. The larva transforms into the pupa in the last larval skin (puparium). Newly-emerged flies are attracted to light, become sexually active in about two days, mate more than once and are strong fliers, traveling up to 6-1/2 miles in 24 hours. The life cycle may be completed in 8 to 15 days, depending on the temperature. *Drosophila* spp. have been widely used by geneticists in studies of the laws of heredity since it is very prolific, easy to rear and has a short life cycle.

Control:

Sanitation: It is most efficient to concentrate on eliminating the larval feeding sites and breeding sites in order to manage large populations. Sometimes simply eliminating an overripe banana, jars of fermenting home canned foods, cider, fruit juices or dirty

garbage cans will control these pests. All exposed fruits and vegetables not consumed immediately should be refrigerated before fermentation begins. Check garbage-laden drain water, clean the gelatinous material in drain pipes, and install (16 mesh) screens since these flies can pass through ordinary house fly screening. Successful control includes eliminating all possible breeding sites; sites can be found by placing masking tape or clear plastic taped over garbage disposals and drain openings overnight to detect fly emergence.

Trapping: One commercial, nontoxic, pesticide-free vinegar fly trap is known as "Bio-Logic Natural Catch Plus Fruit Fly Trap." This convenient ready-to-use vinegar or fruit fly trap reduces fly populations 70 to 80 percent or more by using a simple food-grade vinegar to attract the flies. Traps are placed three to four feet apart on countertops or in display cases of onions, bananas, tomatoes, salad bars or wherever flies are a problem. These simple, safe, low-maintenance traps remain effective, approximately 30 days.

A Mason jar with black paint or paper to cover the top third makes a good trap. Coat the inside of the jar with a sticky liquid such as diluted honey or vegetable oil. Invert the jar over a bait such as crushed bananas. Rest the jar upside down on two blocks of wood to allow flies space enough to feed on the bait. After leaving the bait, they fly upwards to the light portion of the jar, rest on the sides and are killed or become stuck.

Adapted from the Ohio State University Extension, 1999

PESTICIDES ARE POISONOUS!! Read and follow all safety precautions on labels. Handle carefully and store in original containers out of reach of children, pets or livestock. Dispose of empty containers immediately, in a safe manner and place. Pesticides should never be stored with foods or in areas where people eat.

When trade names are used for identification, no product endorsement is implied, nor is discrimination intended against similar materials. Be sure that the pesticide you wish to use is registered for the state of use.

The user of this information assumes all risk for personal injury or property damage.

Rhode Island Cooperative Extension provides equal program opportunities.

For more information, call the URI CE Gardening and Food Safety Hotline at 1-800-448-1011 or (401)874-2929 from outside Rhode Island; Monday-Thursday between 9 am and 2 pm.