Vinegar Flies

Vinegar flies may become a nuisance in homes, restaurants, fruit markets, canneries, 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. Sometimes a rotten banana, potato, tomato, onion, melon, squash, pineapple or apple, dirty garbage receptacle, unclean sour mop or dishcloth, empty tomato catsup bottle, or drain water in refrigerators or iceboxes can yield a heavy population of these flies. Outdoors, they become numerous during summer and autumn where fruit and vegetables are harvested and then suddenly disappear when cold weather arrives. Some species are attracted to human and animal excrement, also feeding on fruits and uncooked foods, serving as a disease carrier.

Adult vinegar flies are about 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 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 1/8 inch long, brown and seed like, with two hornlike stalks at one end.

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 from 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 or 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.

Adults are attracted to yeast growth that cause fermentation and populations may build up on boxes of cracked tomatoes in the field or on pallets at receiving stations of canneries. This fly has 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. Experiments with radiation-induced mutations in these flies led to the successful discovery of the sterile-male technique for insect control, especially the screwworm and certain other fruit flies. Eggs laid by females become nonviable after mating with radiation-treated males. Some species of fruit or vinegar flies have been responsible for human intestinal myiasis (a form of diarrhea) common among workers in grape vineyards.