Common Name: **Darkwinged fungus / Fungus gnats**
Scientific Name: **Family Sciaridae / Family Mycetophilidae**

DARKWINGED FUNGUS GNATS / FUNGUS GNATS

Introduction. The common name of fungus gnat is applied to certain small flies that occur on fungi, which serve as a major food source for their larvae; darkwinged describes the smoke-colored wings commonly found within the Sciaridae. These flies are nuisance pests in and around structures, but a few species are agricultural pests. For the Sciaridae, about 137 species, and for the Mycetophilidae, about 714 species are found in the United States and Canada.

Recognition. Adult fungus gnats are 1/32 to 1/8 inch long, slender, long-legged, and somewhat mosquito-like. They may be black, brown, or yellowish in color and their wings are usually smoke-colored (Sciaridae) or sometimes patterned with darker areas (Mycetophilidae). The antennae are relatively long.

Mature larvae are slender and slightly longer than adults. Fungus gnat larvae have a black head and a white translucent body.

Similar Flies. Phorid (humpbacked) flies (Phoridae) have a humpbacked appearance in side view. They have a few darkened wing veins at the front edge near the body; and they typically scurry about on surfaces near the larval food source.

Biology. Darkwinged fungus gnats (Sciaridae) have 4 larval instars while fungus gnat (Mycetophillidae) larvae pass through 5 instars. Females lay their eggs singly on larval food material and eggs hatch within a few days. Under optimal conditions, the larval stage requires 6 to 8 days. They usually pupate in the soil, and adults emerge in about 3 days.

Fungus gnats are typically found on or near larval food materials. Larvae feed primarily on fungi growing in the soil and moist decaying organic matter. Sciarid larvae mostly feed on decaying plant material, animal excrement, or fungus; but some feed in rotting wood or under bark of fallen trees.

Several sciarid species are economic pests in greenhouses and commercial mushroom houses. Mycetophilid larvae mostly feed on fleshy or woody fungi, on or in dead wood, under bark, or in the nests of birds or squirrels.

Indoors, fungus gnat infestations are almost always associated with the soil of over-watered potted plants and atriums. Secondarily, they may be breeding among fungus growing on damp wallboard and woodwork in structural voids. These sites can be identified with signs of water leaks or moisture problems, such as water stains, peeling paint, swelling of walls or wall coverings. Other sites where fungi may be growing which can support larval development are flat roofs which are particularly prone to water leaks and even the droppings in pet bird cages can be the source if the bottom liner is not changed in a timely manner.

Outdoors, mulched areas and the soil associated with them are usually the fungus gnat breeding zones, especially if new mulch is added annually without first removing the old or if sprinkler systems are present. Other sources include accumulations of dead leaves, old firewood piles and compost piles.

Adults are usually found in moist area where larval food is present. During the day, adults of many species congregate in dark moist places. Some species are most active at dusk and less active at dawn. Adults of most species are attracted to light.

Cultural Control & Precautionary Measures. The key to controlling fungus gnats is finding and eliminating all of the breeding sources. All potential sources must be examined with the attention to damp areas that will support fungal growth. Indoors, the soil of potted plants and atriums should be the primary focus of the inspection, followed by the other areas mentioned above. If adults are being seen primarily at windows near outside doors, breeding sites or attractive exterior lighting should be suspected in the immediate area outside those doors and windows. In offices and healthcare facilities, it may be necessary to have all live plants replaced with fresh or artificial ones. Occasionally, infestations can develop in wall voids of new structures

when damp construction materials are used, trapping enough moisture for fungal growth. This can be confirmed if live or dead gnats are found behind electric outlet wall plates.

The key to solving the problem once the sources have been found is to either remove or dry out the moist material so that it can no longer support fungal growth. Improved ventilation, dehumidification and air conditioning are useful measures indoors; while outdoors turning over the top 2 to 3 inches of soil and mulch near the foundation will speed the drying process.

Professional Control. A Varment Guard technician can provide temporary relief in most situations involving fungus gnats breeding in leaky roofing by installing insect light traps (ILTs) in the false ceiling void to harvest adults until the old roofing materials can be replaced or a new roof installed.

Insect light traps work well in reducing the numbers of gnats indoors. Once the breeding sources have been eliminated, a pyrethrum aerosol space treatment can be used to quickly kill the remaining adults if necessary. However, such aerosol treatments can leave oily residues on surfaces and can pose respiratory risks to unprotected persons who enter too soon following application.