

Vector Information Sheet

EYE GNATS

Eye gnats are prevalent in the Southern United States, primarily in parts of California and Arizona. In the Coachella Valley, they have been a problem since agriculture was first introduced into the Valley. The adult eye gnats are non-biting insects. Their persistent buzzing around human and animal eyes classified them as nuisance insects that may cause economic losses by lowering performance of exposed, mostly agricultural, workers. The primary pestiferous species in the Coachella Valley is *Hippelates collusor*. These eye gnats are, as a rule, very small. They measure approximately 1.5 to 2.5 millimeters in length and are attracted to sebaceous secretions, pus, and blood.

Breeding Sources

Eye gnats are very common in warm, dry regions. The majority of eye gnats develop in light, well-drained, sandy soils that are freshly plowed and contain abundant humus or vegetable matter (such as cover crops or manure) and sufficient moisture. The ideal temperature for eye gnat activity is 90 to 100 degrees Fahrenheit. Temperatures below 70 degrees results in a slow up of activities. However, eye gnats can survive freezing temperatures.

Life Cycle

Females get protein necessary for egg production from exposed mucus. The eggs, about 0.5 millimeters in length, are deposited in batches of up to 50 on or below the surface of the soil. After two days, larvae will develop and feed on a variety of decaying organic matter. The larval stage, under optimum

conditions, requires about 7 to 12 days, the pupal stage about 6 to 7 days, giving a total of approximately 21 days from egg to adult, or 28 days from egg to egg.

Medical Importance

Eye gnats do not bite. They swarm around the head with an annoying persistence, darting at the eyes, mouth, nose, or wounds of humans or other animals. Their labium contains a spine that helps introduction of pathogenic organisms. In this way, eye gnats could aid in the transmission of acute bacterial conjunctivitis or “pinkeye” and yaws to humans, and anaplasmosis organisms to cattle.

Control

The economical impact and magnitude of the eye gnat problem in the Coachella Valley prompted the authorities to form the Coachella Valley Mosquito Abatement District in 1928. The control methods in the past included poison bait and different types of attractant baits that were placed in mostly agricultural fields. For the last ten years, the District has used 8,000 to 10,000 traps each season, supplied with liquid egg bait to attract and remove eye gnats from agricultural areas and country clubs, without using hazardous ingredients. The eye gnat traps are made of two-quart clear plastic jars joined by a black collar with a clear funnel in the upper jar. The traps are secured with a metal wire to wooden stakes in agricultural areas or trees in country clubs. The traps are serviced on a weekly basis and refilled with the liquid egg bait. Removing leaf litter, weeds, grass clippings, and flowers, before decaying, are of a great help for eye gnat prevention.

