



VARMET GUARD®

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Common Name: **Deer flies / Horse flies**

Scientific Name: **Chrysops species / Tabanus species**

DEER FLIES & HORSE FLIES



Introduction. These flies probably received the common name of deer flies (*Chrysops* species) and horse flies (*Tabanus* species) because they are notorious pests of deer, horses, livestock and other mammals. They are pests primarily in suburban and rural areas where both their breeding sites in or near bodies of water and mammal hosts are more abundant. They are found throughout North America, with 350 species occurring here.

Recognition. Deer and horse flies are medium to large, about 1/4 to 1 1/8 inch long; most are stout-bodied. They range from black to pale yellow, usually with stripes on the abdomen, often with bright green or purple eyes.

1. Deer flies (*Chrysops* species) are smaller than horse flies (1/4 to 1/2 inch long.) They are brownish, usually with dark areas (smoky mottling) on the wings. The eyes usually are brightly colored.
2. Horse flies (*Tabanus* species) are larger than deer flies (3/8-1 1/8 inch long) and are gray or blackish in color. The wings usually lack mottled areas but the largest species have wings that are entirely orange-brown or black. The eyes often have horizontal colored stripes.

Representative Species.

1. *Chrysops callidus* measures 1/4 to 3/8 inch long and is black with yellow markings on the thorax and abdomen. The wings have characteristic brown markings. This fly is widespread in the United States.
2. *Chrysops carbonarius* is 1/4 to 1/2 inch long and colored black with yellowish-gray and greenish-gray markings. The wings have characteristic black markings. This fly is widely distributed in the U.S.

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3. *Chrysops flavidus* is 3/8 to 1/2 inch long and colored brown to black with light tan markings. The wings have characteristic black markings.
4. The black horse fly, *Tabanus atratus*, is 3/4 to 1 inch long and entirely black including the wings. It is found throughout the United States.
5. The greenhead, *Tabanus americanus*, measures 7/8 to 1 inch long and has bright green eyes, reddish-brown thorax and abdomen and wings with markings only along the front edge.
6. The striped horse fly, *Tabanus lineola*, is 1/2 to 5/8 inch long, has the thorax striped brown and gray and the abdomen brown or black above with 3 gray stripes.

Biology. Eggs are laid in masses of 100 to 1,000 and are covered with a jellylike material on leaves, rocks, or debris overhanging water or on moist areas. Upon hatching the larvae fall into the water or onto moist soil. In general, the larvae of horse flies are carnivorous and cannibalistic, feeding on insect larvae, snails, slugs and earthworms. However, the larvae of deer flies feed on decaying organic matter (detritivores). They go through 4 to 9 instars (growth stages). Developmental time (egg to adult) may require 3 months to 3 years. Adults live about 3 to 4 weeks, and produce 5 to 6 batches of eggs. Most species overwinter as larvae.

The mouthparts are for tearing and lapping, not piercing. Both sexes feed on nectar, but females require a blood meal for egg laying.

Habits. Most deer flies and horse flies are woodland or forest dwellers. Most species feed during full daylight and are most evident on windless, hot, sunny days. In general, larvae of horse flies (*Tabanus* species) develop in wet soil close to bodies of water and the larvae of deer flies (*Chrysops* species) develop in wet mud often in semi-submerged situations. However some species are aquatic, living in rapidly flowing streams to stagnant ponds and some only in bogs, while others live in relatively dry soil or in rotten wood.

Adults are strong fliers and are capable of flying over 31 miles. However they generally do not disperse widely, usually less than 2 miles. Moving and dark objects are most often attacked. They often rest on paths and roads, especially in wooded areas. A slight drop in temperature or increase in wind will greatly reduce the numbers flying.

The females can enter structures in considerable numbers and then congregate at the windows since they are attracted to light. Both sexes of many species occasionally come to lights at night.



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Cultural Control & Precautionary Measures. Outside control of horse flies and deer flies is not practical because of the inaccessibility of larval developmental sites, the distance adults can travel, and because adults in general do not continually reuse the same resting surfaces. During outside activities, the wearing of light-colored clothing and insect repellents can reduce attack by horse flies and deer flies.

If these flies are entering structures, the best method of control is exclusion. This includes screening all doors and windows. Self-closing doors are helpful. In commercial structures, dock doors should be equipped with an interior screen door, which is lowered when the dock door is up, but the dock not in use, to permit ventilation.

Non-public exterior doors should be equipped with air curtains, which come on automatically whenever the door is opened to help prevent entry.

Properly placed insect light traps will help eliminate deer flies and horse flies once they enter the structure. Outdoors, insect zapper-type light traps placed away from the residence may temporarily reduce populations of horse flies and deer flies in the vicinity.

Professional Control. Varmant Guard pest management professionals can recommend and install the appropriate type and number of insect light traps to help alleviate horsefly and deerfly problems in and around structures.

Insecticides are of little use except for the possible application of a residual insecticide coating on attractive fly landing targets strategically placed on the property.